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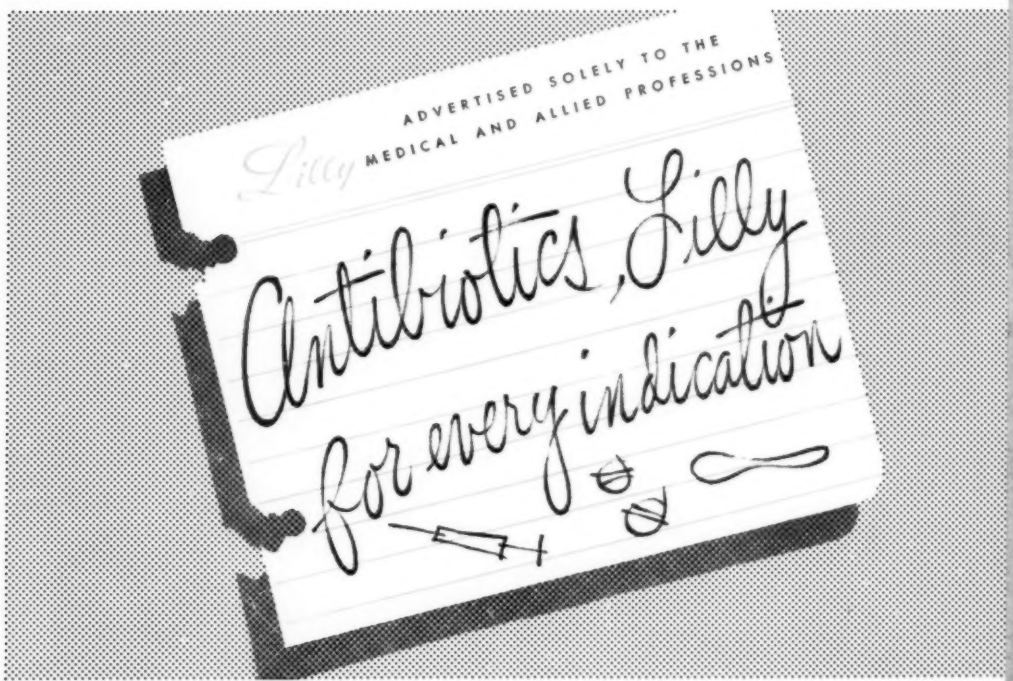

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1. Van Alyea, O. E., and Donnelly, Allen: Arch. Otolaryng., 49:234, Feb., 1949.

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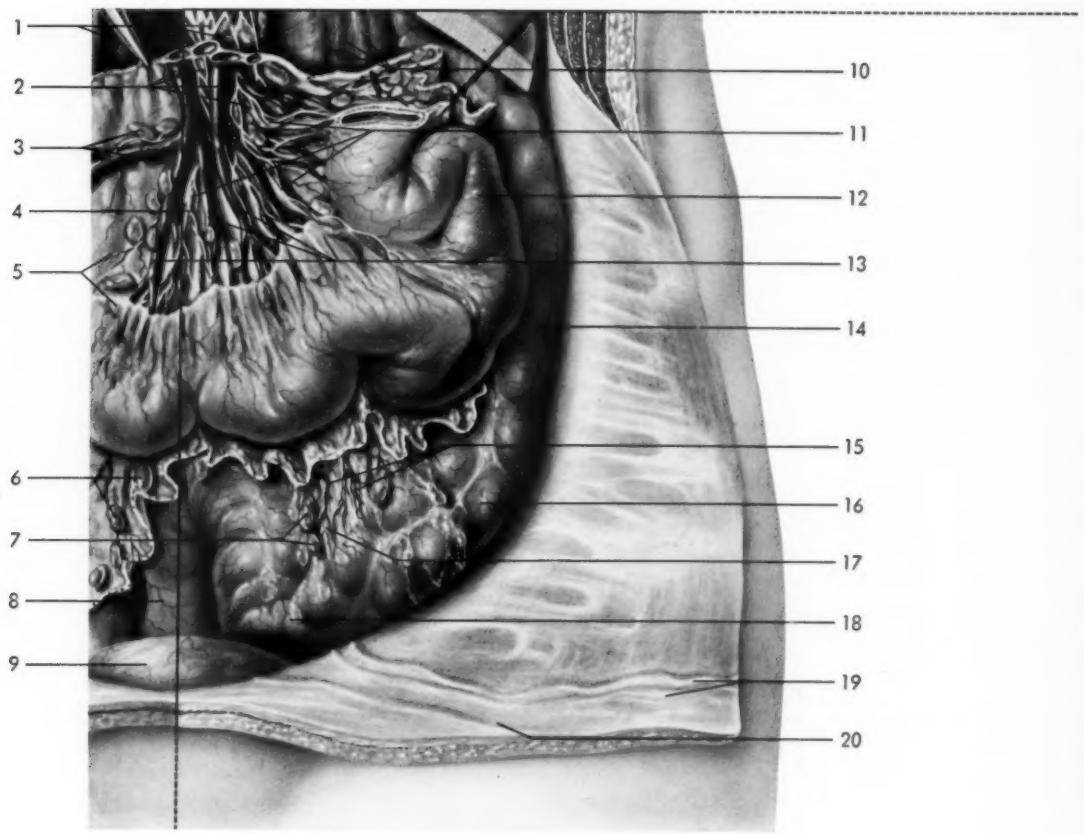

1 Vena cava, aorta and abdominal aortic plexus

2 Branches of superior mesenteric artery and vein

3 Ileocolic lymph node and ileocolic artery and vein

4 Sympathetic abdominal plexus

5 Mesentery

6 Mesenteric lymph nodes

7 Mesocolic lymph nodes

8 Rectum

9 Urinary bladder

10 Inferior mesenteric vein, left colic artery and ureter

11 Intestinal arteries

12 Ileum

13 Intestinal veins

14 Descending colon

15 Branches of sigmoid artery and vein

16 Iliac colon

17 Mesocolon

18 Sigmoid colon

19 Epigastric artery and vein

20 Lateral umbilical ligament

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ARIZONA MEDICINE

Journal of ARIZONA MEDICAL ASSOCIATION

VOL. 10, NO. 8 AUGUST, 1953

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Published monthly by the Arizona Medical Association. Business office at 424 Heard Building, Phoenix, Arizona. Subscription $3.00 a year, single copy 25c. Entered as second class matter March 1, 1921, at Postoffice at Phoenix, Arizona, Act of March 3, 1879.

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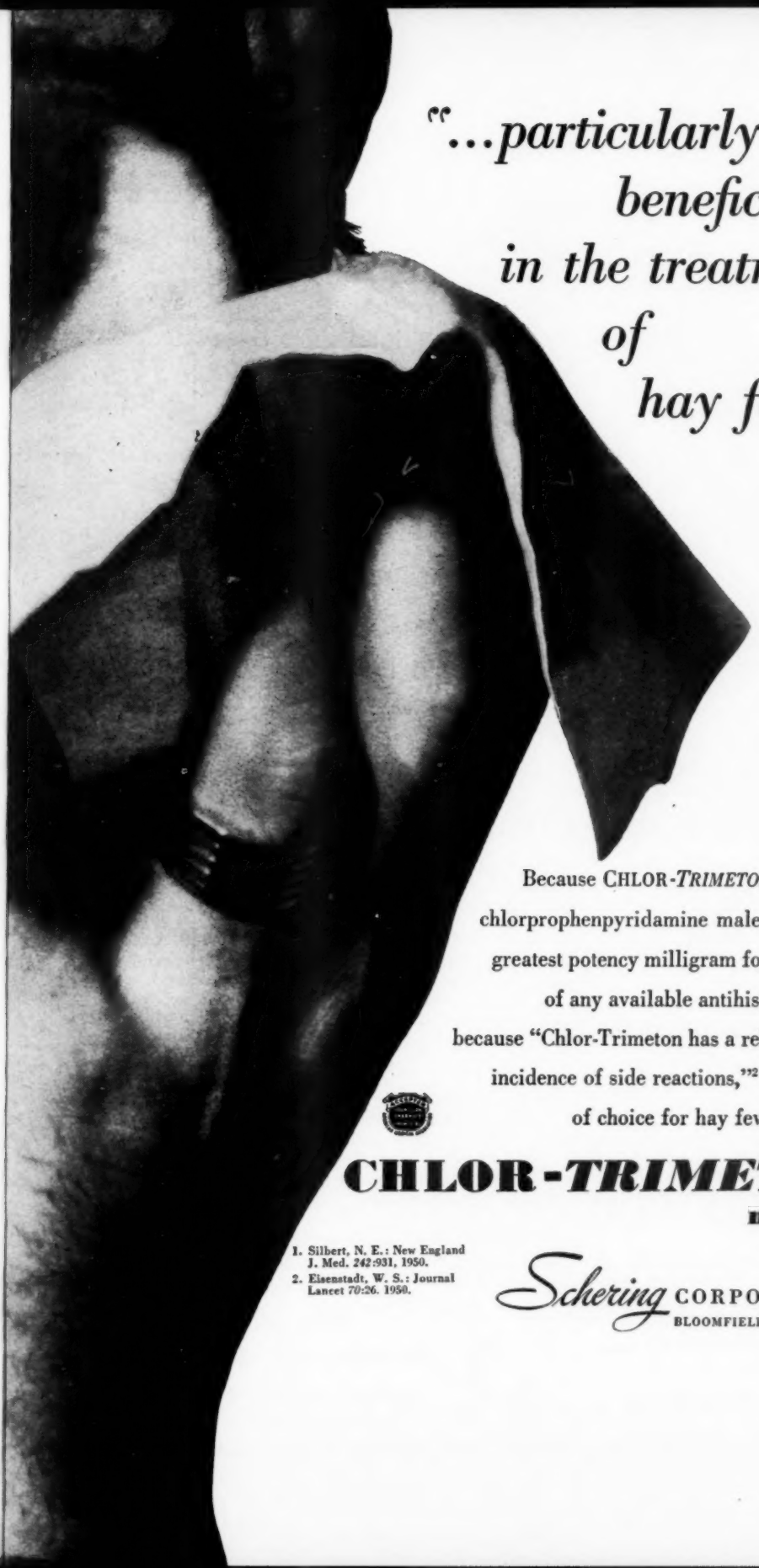

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1. Silbert, N. E.: New England J. Med. 242:931, 1950.
2. Eisenstadt, W. S.: Journal Lancet 70:26. 1950.

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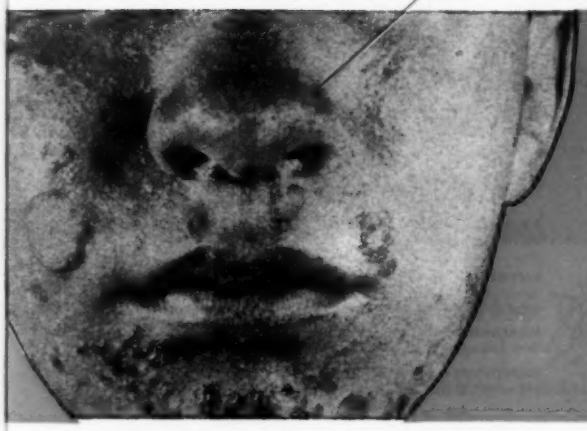
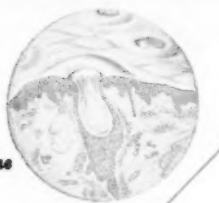


skin infections and antibiotics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1. *Bednar, G. A.: South. M. J. 46:298 (March) 1953.*
2. *Wright, C. S. et al.: A. M. A. Arch. Dermat. & Syph. 67:125 (Feb.) 1953.*
3. *Robinson, H. M. et al.: South. M. J. (in press).*
4. *Andrews, G. C. et al.: J. A. M. A. 146:1107 (July 21) 1951.*

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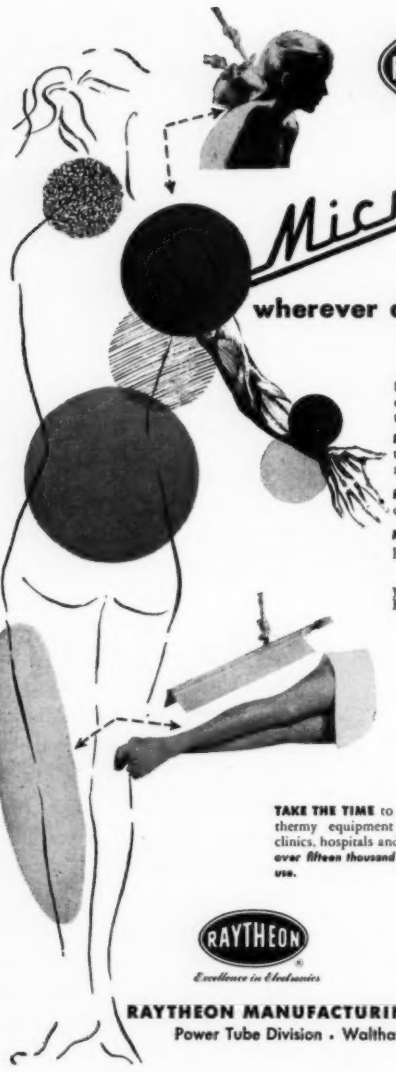

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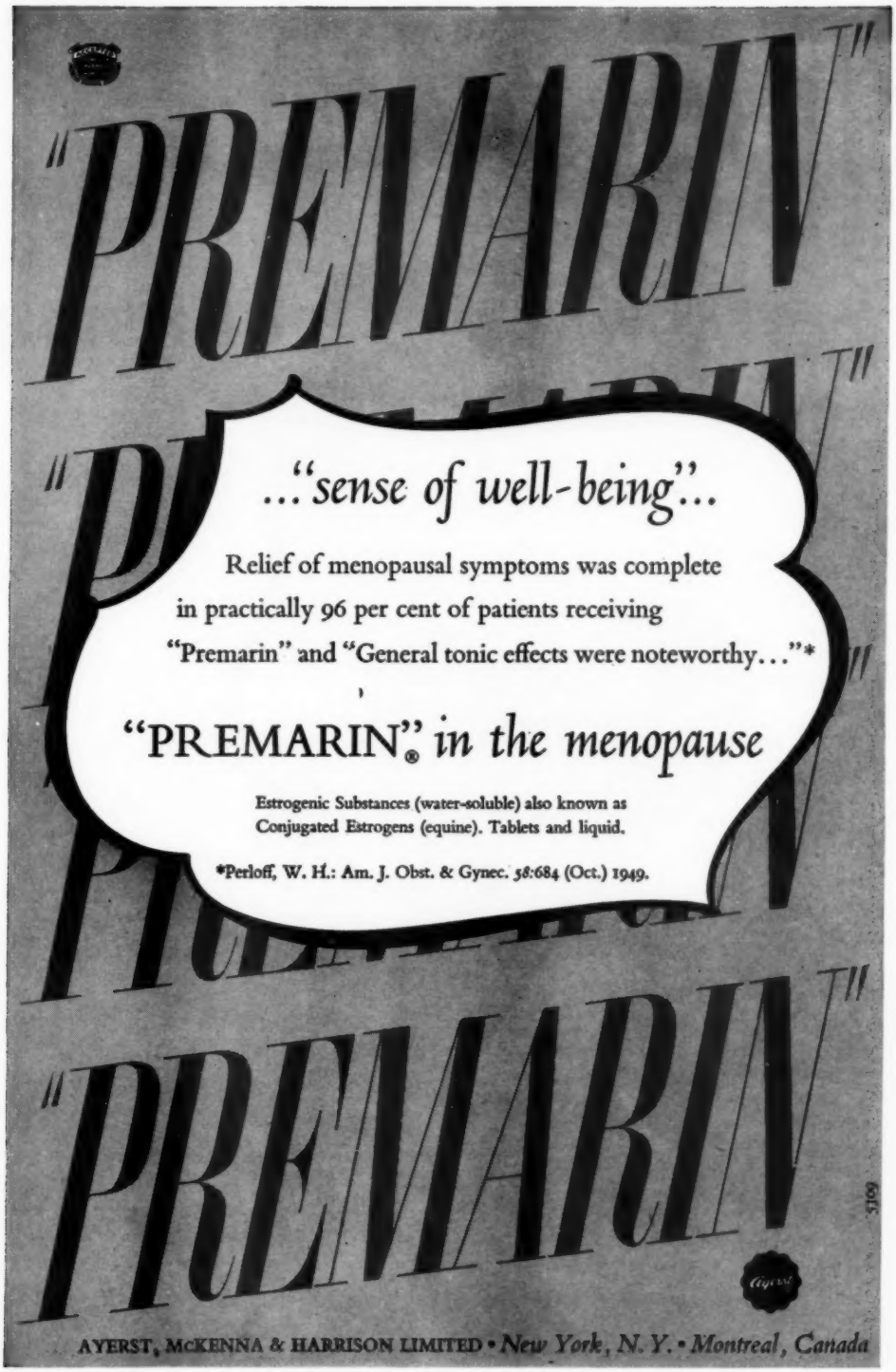

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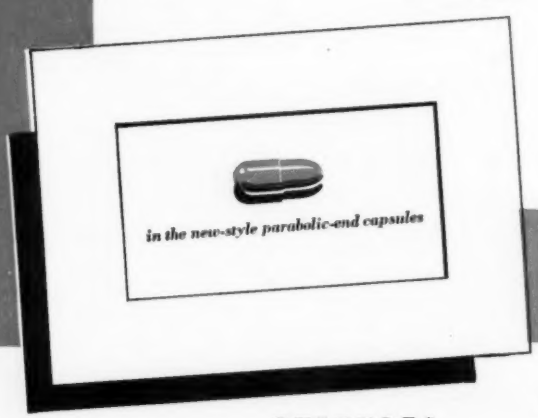

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ARIZONA MEDICINE
Journal of Arizona Medical Association

VOL. 10, NO. 8 AUGUST, 1953

Original ARTICLES

THORACOPLASTY WITH SUBSCAPULAR PARAFFIN PACK

William M. Lees, Robert T. Fox, Miguel Castellanos
William E. Adams and Otto L. Bettag
Chicago, Illinois*

Since de Cerenville's attempt in 1885 to utilize rib resection to close lung cavities, many modifications of the operation have been reported. These include the operations of Quincke, Spengler, Boiffin and Gourdet, Brauer, Friedrich, Wilms and Sauerbruch. All of these men performed successful thoracoplasties albeit with a high mortality from the extensive resection of the chest wall which led to the marked paradoxical motion of the thorax. Gradually surgeons began to realize that it was safer to perform the operation in two or more stages, and Ochsner and Hedblom stressed the point in the literature. At about the same time, Alexander (1925) mentioned the value of the multiple-stage procedure and by 1928 this was routine in his clinic. It was then found that better collapse could be obtained if the transverse processes were removed. Therefore, today, the modern thoracoplasty of the conventional type consists of removal of ribs from above downward in several stages together with their transverse processes.

Reports from various clinics as to the efficacy of this procedure in controlling the disease have been reported as being from 55% to 85% of the patients, depending upon the type and extent of disease present. This leaves a considerable number of patients in whom the operation has failed to control the tuberculous infection. The last mentioned fact has caused many surgeons to try many methods of improving the conventional thoracoplasty. This led to the use in the subscapular space of argyrol soaked gauze, muscle flaps, fat grafts, saline solution, air, olive oil, gelfoam, lucite balls, polythene bag, costoversion and paraffin. The variety of substances utilized indicates that we all recognize the limitations of thoracoplasty and seek to improve the results obtained with it. It also indicates that no one substance is completely satisfactory as yet.

Realizing the limitations of the conventional thoracoplasty, one of us (W.E.A.) in 1947, began to utilize a molded mass of paraffin in the subscapular space after resecting the ribs. Insofar as we can determine, this is the first use of paraffin in this manner. In 1936 Wangensteen suggested the use of paraffin or a paraffin coated rubber sponge, to be put in the subscapular space after the first stage and to be removed at the second stage of the thoracoplasty. However, there is no reference to indicate that he actually used this procedure. Early in the experience Adams and later Head removed the subscapular paraffin at the time of the second stage. More recently the thoracoplasty has been performed in one stage and the paraffin left in place.

Two years after the first several cases, it was noted that the paraffin was well tolerated by the patients and the collapse obtained was excellent. We therefore began to utilize the operation as a routine at the Municipal Tuberculosis Sanitarium of Chicago, in December 1950. More than 225 patients have now had such a modified

From the Municipal Tuberculosis Sanitarium, Stritch School of Medicine of Loyola University, and the Medical Schools of Northwestern University and the University of Chicago.
Presented, Arizona Chapter of Amer. Coll. Chest Phy., April, 1952.

thoracoplasty performed by the authors or by residents under the direct supervision of one of us. One hundred and fifty-five of these patients have been followd for more than 6 months. We are fully cognizant of the fact that no conclusions can be drawn from a study based on such a short follow-up, especially in such an insidious disease as tuberculosis. However, we feel that our observations will be of interest to many who have to treat tuberculous patients.

Essentially the operation is performed as follows: the ribs are removed subperiosteally overlying the area of disease. As many as eight ribs have been removed in one stage. The dissection is carried posteriorly to the head of the ribs and the attachments of the intercostal muscles to the Erector spinae muscle mass are freed. Only the tips of the transverse processes are removed. In the space so created, a molded mass of sterile paraffin is placd. The extracostal muscles are then carefully reapproximated in anatomical layers. The wax pack improves the collapse and more importantly, maintains this collapse. (Fig. 1).

Following the conventional thoracoplasty, fluid fills the subscapular space and an x-ray taken at this time reveals excellent collapse. As this fluid is absorbed the regenerating rib cage is permitted to move away from the spine and mediastinum, thereby permitting partial re-expansion of the underlying lung in spite of the protection of the scapula. Admittedly, the majority of these patients have their disease controlled by the collapse obtained even though the collapse is not optimum. Even in this group of patients, however, several stages of operation have been necessary with the resultant risks attendant in a surgical procedure of such magnitude. In addition, the removal of the transverse processes results in roto-scoliosis of the vertebral column which in some patients is severe enough to greatly decrease pulmonary ventilation. The chest wall deformity incidental to thoracoplasty is familiar to all who treat tuberculosis.

The use of a paraffin plomb or prosthesis has been proven to prevent the sinking in of the chest wall and scapula. More importantly, the subscapular paraffin pack maintains the collapse, and prevents paradoxical motion of the chest wall permitting the operation to be performed in one stage in 90% of the cases. The one stage procedure should be of considerable importance in the surgical treatment of tuberculosis in mental patients. It also effects great economy in the care of large groups of patients. Permitting the muscle attachments to remain on the transverse processes helps to prevent scoliosis (Fig. 2).

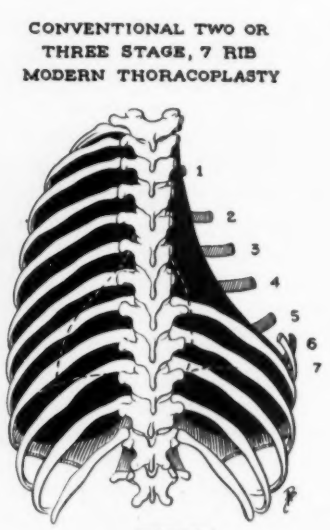


FIGURE A

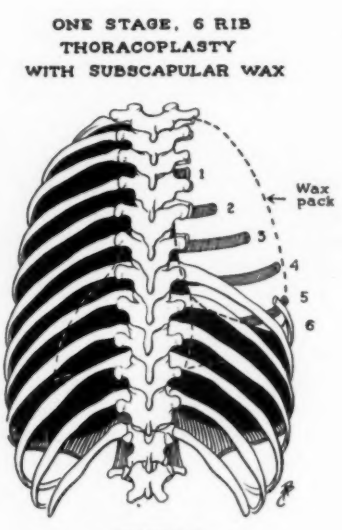
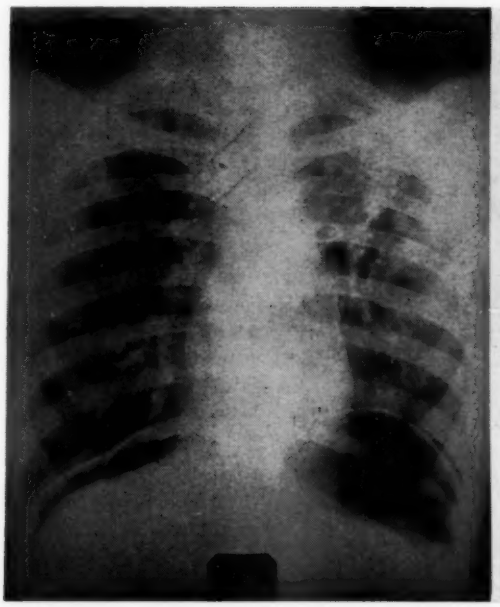


FIGURE B

Figure 1—Diagrammatic illustrations of the bony thorax, A—after a modern, conventional type, 7-rib thoracoplasty, B—following a 6-rib, one-stage thoracoplasty with a subscapular wax pack. Note greater degree of selectivity of collapse in B, with resection of one less rib, in one stage, and without the removal of the entire transverse processes. (Reprinted by permission of C. V. Mosby Company).



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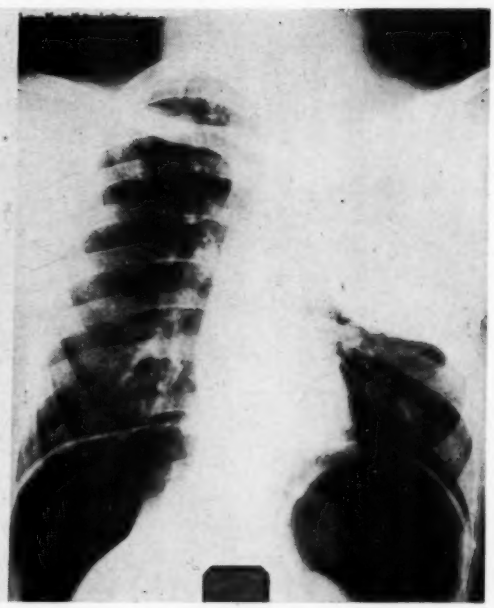

FIGURE B

Figure 2—Thoracoplasty with a subscapular wax pack in place. A—pre-operative x-ray appearance of chest showing far advanced, cavitary tuberculosis in the left lung and scattered disease in the right. B—film 1 year after operation with the wax pack in place and pneumoperitoneum re-started. C,D,E—photographs of the patient. Note minimal scoliosis, maintained collapse and absence of chest wall deformity.

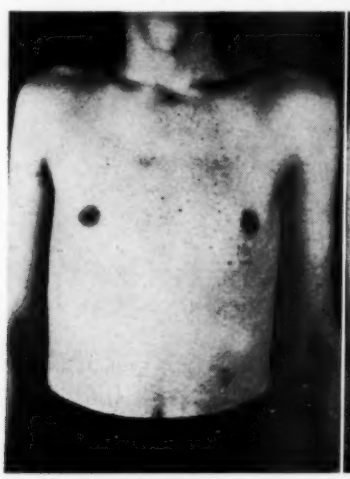

FIGURE C

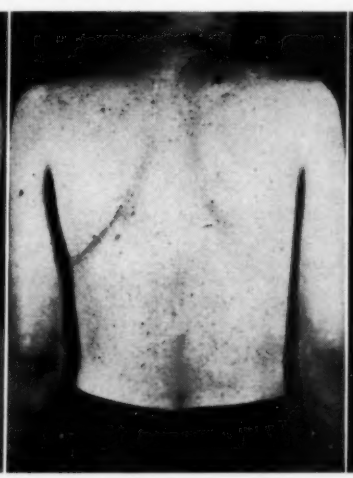

FIGURE D

FIGURE E

The patients in this study have pre-operatively been divided in three groups depending on the severity of their disease:

I—Patients in whom thoracoplasty can be reasonably expected to control the disease.

II—Patients whose cavitation is of such size or location that thoracoplasty cannot be reaonably expected to control the disease in more than 50% of the cases.

III—Patients with far advanced bilateral disease who may be classed strictly as salvage cases.

A total of 155 patients have had their operation 6 or more months before this study. Eighty-one are men and seventy-four are women. Ninety-nine are Causasian and fifty-six are in the group of Negro, Mexican, Indian or Oriental. Eighty-two patients had their operation on the right side and seventy-three on the left side. Nine patients were between 17 and 20 years of

age, forty-six between 21 and 30 years, forty-nine between 31 and 40 years, twenty-one between 41 and 50 years, fifteen between 51 and 60 years, and two patients were 63 and 65 years old respectively. General anesthesia was utilized in 106 and local anesthesia in 49 cases. No additional risk has thus far been apparent in those patients with general anesthesia. More recently we have utilized epidural anesthesia with excellent results.

Subscapular fluid requiring aspiration occurred in 31 instances. In six patients, repeated aspiration was necessary. Of the latter, in only one did the fluid persist so that removal of the pack was necessary. This patient is well and negative by culture. In 38 patients, intrapleural fluid developed even though no obvious pleural tear was noted by the surgeon. In only two instances were more than two thoracentesis required. In all these patients, fluid formation ceased with no obvious effect on the lung or pleura.

In five patients there was exacerbation of a pre-existing lesion in the contralateral lung. These patients had tuberculous bronchitis reported at some time pre-operatively. All of these have cleared satisfactorily under treatment. In no patient was there a true spread of disease to an area previously seen to be uninvolved.

In two instances, some pressure effect on the subclavian vein was present. In one instance the pack was removed and replaced by a smaller one with complete relief of the symptoms. In the other patient, symptoms appeared one year after thoracoplasty and we have discussed removal of the wax with the patient. Both patients have negative sputa. Two patients had brachial plexus pain which subsided spontaneously. It is only fair to say that these four patients were operated upon early in our experience with this operation, and in all probability our inexperience with the amount of wax to use contributed in no small way with the difficulty.

Four patients died 6 months or more after operation. There were three deaths within 3 months after operation; of these,

one, a woman age 26, died 2 days after operation; this patient had far advanced bilateral disease and was accepted as a desperate risk, salvage case,

the second, a man age 65, died 3 weeks after surgery, apparently of a coronary since he had been up and about and was found dead in bed in the early morning hours;

the third, age 52, died 2 months after operation of gradual cardiovascular failure, in spite of what appeared to be adequate treatment. None of the patients who died was in Group I; two patients were in Group II, and five patients were in Group III.

Routinely, all patients were bronchoscoped as part of the pre-operative work-up. Definite evidence of bronchial disease presumed to be on a tuberculous basis was present in 39 patients. These patients were given intensive chemotherapy (daily Streptomycin and PAS) and regression or disappearance of the endobronchitis was a prerequisite to operation. Five patients had a tuberculous empyema prior to operation. Even though these complications obviously increase the morbidity, we have not deleted them from this study since it is our intent to report the results in an unselected group of patients.

Three successive sputum or gastric cultures were required before the patient was labelled as negative. We have been able to obtain these studies in all cases. However, in 16 patients, less than 12 weeks have elapsed since the last culture was planted and even though they are ngative so far, we have not included them in the following table.

TABLE I

Group	Total Patients Followed	Negative No.	Negative %	Positive No.	Positive %	Dead No.	Dead %
I	95	86	90.5	9	9.5	0	0
II	36	22	61.1	14	38.8	2	5.5
III	8	0		8		5	62.5
Total	139	108	77.7	31	22.3	7	5.0

It will be noted from Table I, that in those patients for whom thoracoplasty offers a good chance for cure (Group I) less than 10% were positive 6 months or more after operation. Also important is the fact that Group II patients, with less than 50% chance for cure by thoracoplasty, at least 61% were negative 6 months or more after operation. These results were obtained despite the fact that a considerable percentage of these Group II patients had either bilateral active disease or a cavity of the size or the location of which made it doubtful that arrest of the disease would follow. We therefore believe that the addition of the subscapular paraffin pack has merit and warrants further investigation.

SUMMARY

Experience with over 225 patients with pulmonary tuberculosis treated by a modified type of thoracoplasty using a subscapular prosthesis

is presented. The advantages of ths modified operation over the conventional thoracoplasty are outlined. In view of the low incidence of complications and the satisfactory results obtained, we are encouraged to continue using this procedure.

DIAGNOSTIC AND THERAPEUTIC NERVE BLOCKS: THEIR USE IN COMBATING "PATHOLOGIC" PAIN*

John S. Lundy, M.D.
Section of Anesthesiology and Intravenous Therapy,
Mayo Clinic, Rochester, Minnesota

The use of nerve blocks for the relief of surgical pain is understood and accepted. In the last year or two certain new blocks have been suggested (1-3). Diagnostic and therapeutic nerve blocks as a means of attacking the problem of pain in general also have been under consideration for a long time. Nevertheless, various contributions in this field have not been sufficiently understood, appreciated or accepted. Many have attacked the problem and it is a field in which I, too, have been greatly interested (4-7).

Most of the diagnostic blocks are based on the same blocks that first were made to provide anesthesia for operation. It now appears that some of the work that has been done in connection with diagnostic and therapeutic blocks will contribute considerably toward better technic in connection with operations, both during the time of operation and immediately afterwards. For example, after I had worked with the preparation dolamin, which contained 0.75 per cent ammonium sulfate and the same percentage of benzyl alcohol, I gradually tried various combinations. I think the optimal one that I have yet used is a mixture called "I PAB_2," which stands for the following: 1 per cent procaine, 2.5 per cent ammonium sulfate and 2 per cent benzyl alcohol. With this mixture placed properly under roentgenographic control, or a mixture called "PAB_2," which contains 0.5 per cent procaine, 2.5 per cent ammonium sulfate and 2 per cent benzyl alcohol, or both mixtures, I have been able to prolong relief from pain for many hours, and sometimes for days or longer. A diagnostic block done with a local anesthetic agent only, such as procaine or metycaine, might leave doubt as to the diagnosis. I expect gradually to increase the concentration of ammonium sulfate in the mixture.

There has been a tendency to inject absolute alcohol about the lumbar sympathetic chain or the stellate ganglion in order to obtain a prolonged, temporary effect similar to that of sympathectomy. This serves two purposes: 1. It helps the patient temporarily and, if his trouble does not recur, he can avoid operation. 2. If the patient is satisfactorily relieved for a time, and his symptoms recur, sympathectomy can be performed with a favorable prognosis. The effectiveness of the use of alcohol on the sympathetic system usually is verified by having a sweating test done. On occasion the sweating pattern which I sought has not developed until after the third attempt to block the sympathetic nerves. Furthermore, duration of the effect of the block can be verified by a sweating test.

This particularly applies to a patient who suffers extremely from a lesion of the pancreas and block of the posterior splanchnic system, with alcohol, has been done under roentgenographic control. It is surprising, however, that in some cases, although relief of pain is distinct, the expected sweating pattern is indistinct whereas, in other cases the sweating pattern is definite. If the pain of these patients is relieved for two or three months, but then returns with great intensity, as in a case which I currently have been observing, the sweating test should be repeated. If results of the sweating test are much as before, there is no need for re-injection. What the patient probably needs is an operation for relief of his pancreatic condition.

Case 1.—To help a woman who had a pancreatic lesion, block was done on December 28, 1951. She experienced relief for two and a half months. Her sweating pattern did not change but her pain became intense. Finally, because of her thinness—weight 78 pounds (about 35.5 kg.)—the pancreatic lesion could be palpated and was perceived to have increased in size. Accordingly operation was performed, consisting of the following: extensive resection of part of the stomach, all of the duodenum, half of the pancreas, 2 inches (about 5 cm.) of the common

*Read at the meeting of the New England Society of Anesthesiologists, Hanover, New Hampshire, October 3, 1952.

bile duct and 8 inches (about 20 cm.) of the jejunum. Continuity of the stomach and upper part of the intestinal tract was re-established and the orifices of the common bile duct and the pancreatic duct were reimplanted. This patient made an uneventful convalescence. Soon she weighed 97 pounds (44 kg.), was free of pain and was feeling well. I think she would not have been helped by another nerve block.

Case 2.—A woman, 44 years of age, on September 28, 1949, underwent right paravertebral somatic block of cervical nerves 4, 5, 6, 7 and 8, because of root pain from metastatic carcinoma of the right breast. One cubic centimeter of solution (2 per cent metycaine without epinephrine) was injected through each needle beginning with C-4 and proceeding to include C-8. When the needles were placed and the solution injected, it appeared that the pain path was over C-6, 7 and 8. The first thoracic nerve was not injected because, not more than ten minutes after injection of the cervical nerves, the patient was practically free of pain, even in the little finger; only a little distress was left in the back of her hand. On September 30, 1949, posterior (sensory) rhizotomy of the fifth, sixth, seventh and eighth cervical segments was performed. She was relieved of her pain for a time afterwards however, eventually she died of carcinoma and, before she died, more pain had developed in other parts of her body.

Case 3.—A woman, 58 years of age, on January 26, 1951, underwent diagnostic left stellate ganglion block (anterolateral approach) because of pain in the left ear and left arm. The following day the patient said that she was completely relieved of pain in her left ear for one hour following establishment of the sympathetic block and that the pain in her arm was clearing. On January 30, 1951, left cervicothoracic sympathetic ganglionectomy (anterior approach) was done and, on February 6, 1951, at the time of her dismissal, the patient stated that she was completely relieved of the pain in her head and that the pain in her arm and shoulder was clearing.

Case 4.—A woman, 55 years of age, on December 11, 1947, underwent excision of an inflammatory ulcer of the posterior wall of the vagina. She returned September 14, 1950, because of pain in the left groin, thigh and knee, at which time diagnostic and therapeutic caudal and transsacral blocks were done. A caudal needle was inserted through the sacrococcygeal hiatus into the caudal canal and was thrust superiorly until its point was at the level of the fourth sacral nerve. An 80 mm. needle was placed in the left second sacral foramen. By roentgenographic methods, the needles were seen to be in good position. Five cubic centimeters of 1 per cent procaine solution, with epinephrine, were injected into the canal and 10 cc. of the same solution into the second sacral foramen. After fifteen minutes the patient was relieved of pain in the left thigh and knee but she still complained of pain in the left groin. Ten cubic centimeters of additional solution were injected into the caudal canal fifteen minutes later and, five minutes later, the patient was completely relieved of her old pain. She then was able to lie prone on the table, which she had been unable to do previous to the block. Ten centimeters of 5 per cent ammonium sulfate were then injected into the caudal canal and 2.5 cc. into the left second sacral foramen. The patient was relieved of pain in the left leg for almost five weeks.

On October 20, 1950, a therapeutic injection of procaine and ammonium sulfate was done because the woman was having pain in both hips and over the sacral region, as well as down the medial aspect of her left thigh. We have been informed that the patient died in March, 1950, and that our attempt to relieve her pain was unsuccessful.

I am convinced that the physician who is to perform a diagnostic or therapeutic nerve block should become acquainted with his patient, should understand him as well as possible and should see to it that the patient realizes that the blocks are intended to help him. It is impossible to promise what the result will be but, as a rule, a block must be done in order, perhaps, to arrive at a decision concerning the program to be followed. In a case in which a large, so-called functional element is thought to exist, perhaps the patient can be interviewed by a psychiatrist before the block is effected. Then, if the pain can be relieved for a time by means of nerve block, the psychiatrist may be able to engage the patient's attention better, and perhaps to learn more about the case, than if the block had not been done. The sudden mental change that goes along with relief of pain may increase the ability of the patient to talk and

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of the psychiatrist to gain the patient's confidence.

The whole question of pain is fascinating and has been dealt with extensively in the past. Recently, however, an increase in the amount of information has aided toward understanding of the difficult subject. In February, 1952, almost an entire issue of the *Journal-Lancet* was devoted to material concerning pain and more attention will be paid to the subject in subsequent issues. An issue devoted to pain is planned for November, 1952, and another for about February, 1953.

I think it is beginning to become more or less clear that there are two kinds of pain: physiologic pain and pathologic pain. It is becoming increasingly apparent to those of us who have worked in the field of anesthesia for a long time, that if we are to attempt to combat pathologic pain, we must have a great deal of information at our disposal, and must have some understanding of it. More information and more understanding will be required than were necessary simply for the fight against physiologic pain —an example of which is anesthesia for surgical operation.

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PHOENIX *Clinical* CLUB

MASSACHUSETTS GENERAL HOSPITAL CASE RECORD NO. 28

The Case History in this discussion is selected from the Case Records of the Massachusetts General Hospital, and reprinted from the New England Journal of Medicine. The discussant under Differential Diagnosis is a member of the staff of the Massachusetts General Hospital. The other discussants are members of the Phoenix Clinical Club.

(Note: Sort of an IQ test. Thing looked difficult to me, but the clinical diagnosis, the Mass. Genl. discussant's diagnosis and the anatomical diagnosis,—all agreed. So, it must be easy. Presented, so our discussants can settle whether it is easy or hard.)

A forty-nine-year-old woman entered the hospital because of loose bowel movements.

The patient had a twenty-year history of mild epigastric pain, with some nausea and vomiting, and intolerance to fried food. One year prior to admission, because of increasing severity of the symptoms, a cholecystectomy was done, with relief of the symptoms for a short time. Seven months prior to admission the patient noted a change in character of the epigastric pain, which became sharper. The pain occurred in episodes, once or twice a day, lasted ten to fifteen minutes and on some occasions radiated to below the right scapula. These attacks had no relation to meals and occurred during both night and day, sometimes awakening. Four months prior to admission she noted a burning epigastric pain that occurred fifteen to twenty minutes after meals. With this she was frequently nauseated and at times vomited bile-stained material, with relief of the pain. At about this time she first noted loose stools; these occurred at first only one or two days a week but later in periods of three or four days of diarrhea alternating with two to three days of obstipation or at most one formed stool. The loose stools were accompanied by abdominal cramps and at times by tenesmus; during the periods of obstipation the abdomen increased in size and then decreased with the onset of the diarrhea. The stools were thick, grayish-yellow, liquid, foamy and foul smelling; bloody mucus or greasiness had not been noted. As the severity of the symptoms gradually increased, three months prior to admission the patient was placed on a bland diet and given medicine. She continued to have diarrhea, epigastric pain and abdominal cramps; six weeks before admission she entered another hospital, where she remained for five weeks. Deep pigmentation of the skin of the hands, chin and legs was noted. The hemoglobin was 71 per cent and the red-cell count 3,660,000. There were 13 eosinophils in the smear of blood taken when the patient was in a fasting state. The serum sodium was 138.7 milliequiv and

the potassium 4.7 milliequiv. per liter; 2.88 mg. of 17-ketosteroids were excreted in 24 hours. A Kepler water test was normal. The patient received two blood transfusions, folovite, reticulogen, liver injections, iron tablets, paregoric and a bland low-fat diet, but there was little change in her condition. She had lost 25 pounds in weight and was becoming progressively weaker. The diarrhea and abdominal pain remained unchanged.

Eleven years before admission she had a supravaginal hysterectomy for "fibroids." Two years prior to admission she had an attack of rheumatoid arthritis that lasted five months and subsided during gold therapy. In the winter of that same year and in the following winter she had had attacks of "pleurisy." There was no previous history of diarrhea.

Physical examination revealed a thin woman with a diffuse yellowish-brown pigmentation of the skin; the deepest pigmentation was in palmar creases and operative scars. The heart and lungs were normal. The abdomen was protuberant and the epigastrium was somewhat tender. No masses or organs were felt.

The temperature, pulse and respirations were normal. The blood pressure was 120 systolic, 50 diastolic.

The urine was normal. Examination of the blood showed a red-cell count of 3,260,000, a white-cell count of 10,900, with 94 per cent neutrophils, and a hemoglobin of 9.0 gm. A hematocrit was 24 and the mean corpuscular volume was 73 cu. microns. The serum sodium was 130 milliequiv., the chloride 97 milliequiv. and the potassium 3.0 milliequiv. per liter; the total protein was 4.7 gm., the amalyse 23 units, the alkaline phosphatase 9.6 units and the nonprotein nitrogen 20 mg. per 100 cc. A bromsulfalein test and a prothrombin time were normal. The eosinophil count was 9 cells per cu. mm. in the fasting state, 48 cells per cu. mm. four hours after ACTH (adrenocorticotrophic hormone) injection. The first few stool specimens were guaiac negative, but subsequent specimens were consistently guaiac one plus to four plus. No undigested meat fibers were seen on microscopical examination of the stools. There was an increase in neutral and combined fats in the stools. Two and three-day stool collections showed a total daily fat content varying from 15.77 to 23.05 gm. and a total daily nitrogen content varying from 1.88 to 2.68 gm. A gastric analysis showed no free hydrochloric acid. No tumor cells were seen in a cytologic examination of the duodenal drainage. The duodenal contents were collected for 45 minutes after the injection of 50 cc. of 20 per cent cream; analysis revealed the following: amalyse 74.0 units per 100 cc., lipase 32.6 cc. and trypsin 35 per cent. A gastrointestinal series showed a dilated duodenum and abnormal segmentation of the jejunum, with pooling of the barium. The mucosa of the duodenum and jejunum appeared to be coarse and wide.

During the period of investigation the diarrhea continued unabated, the stools being greasy and foul. On the tenth day intravenous injection of ACTH was begun; three days later her appetite had returned and she was gaining weight and strength rapidly. During the next week she continued to improve; there was mild pedal edema and mild euphoria. On the twenty-first hospital day cortisone was substituted for the ACTH. The stools continued to become more formed and less frequent until she became mildly constipated. On the twenty-fifth hospital day she developed a chill, profuse sweating and a temperature of 102.8°F. The following day she had four loose stools and vomited occasionally. She felt very weak and "gone." The abdomen was soft, but the right lower quadrant was tender and there was no peristalsis. The blood pressure was 90 systolic, 70 diastolic. The following day an occasional abortive peristaltic tinkle could be heard, and 24 hours later the abdominal tenderness was less and subdued peristalsis could be heard. The vomiting and diarrhea persisted. On the twenty-ninth hospital day an operation was performed.

DISCUSSION BY DR. KENT THAYER

This 49 year old woman with loose greasy bowel movements and epigastric pain, shows quite an assortment of laboratory results which seem somewhat conflicting to me. We will start by trying to eliminate certain diseases. Evidently, Addison's disease was considered. We know in Addison's disease, just before or during a crisis, there may be abdominal distress which may be cramping in character. We also know that there may be associated diarrhea at these times. The pigmentation of the skin of her hands, chin and legs, is not particularly characteristic of Addison's disease, but evidently this was considered and she showed serum sodium and potassium of nearly normal levels. However,

her 17-ketosteroids were low. A Kepler water test was done and reported normal. When she entered the last hospital, it was found that her serum sodium, chloride, and potassium were all rather low. A Thorne test was done and was positive for Addison's disease; that is, she did not have a fall in her eosinophil count in four hours after the administration of ACTH. However, later on this patient was given ACTH and improved, which seems to me to eliminate Addison's disease for an Addisonian who shows no response to ACTH as far as the eosinophil count is concerned should not respond clinically. Also, a patient with enough destruction of the adrenal cortex to cause adrenal cortical failure should not respond to ACTH. Therefore, I believe Addison's disease is eliminated.

When a patient has many greasy, foul, foamy stools, one suspects pancreatic disease. This patient had had her gall bladder removed because of a long history of epigastric distress with nausea and vomiting and intolerance to fried foods. No note is made of whether actual gall bladder disease was found or whether there was a stone, but the patient did obtain relief for about three months. We must suspect, therefore, that she did have biliary tract disease and this is usually present in pancreatic disease. The history of epigastric pain which was rather sharp, lasting ten to fifteen minutes, and later a history of epigastric burning which occurred after meals and which was relieved by vomiting, then followed by loose greasy stools would cause us to suspect either a chronic pancreatitis or pancreatic calculi. Examination of the stools of patients with pancreatic insufficiency usually shows meat fibers, increase in the protein content, and increase in the fat. Our patient evidently had an increase in fat of the stools, but from the way it was recorded, I am unable to say how much, for they measure it in grams without giving us the number of grams of stool. We do not know whether this is one percent or one hundred percent. Ordinarily, the fat content of the stool should be about 17.5%. Usually in pancreatic disease the percent of neutral fat is relatively higher and that of fatty acids is low. We are not given this percentage in the protocol. Also, our patient excreted a normal amount of nitrogen in the stools for it should be three grams or less to be normal. The results of the duodenal drainage are also somewhat confusing. The amount of amylase obtained was normal. The lipase is recorded as 32.6 cc. The normal in the books I have seen is 7,000-14,000 units per hour. I am unable to interpret this. The trypsin is recorded as 35%. The normal is recorded as 20-40 units per hour. It has been shown that the enzymes obtained by duodenal drainage using the secretin test, may be somewhat variable. In acute or complete block of the pancreatic duct, all enzymes are decreased. However, in milder forms of functional disturbance, such as chronic pancreatitis, there may be a dissociated disturbance. That is, the amylase and lipase are decreased and the trypsin may be normal, which may account somewhat for the more complete digestion of proteins. It is possible that this patient has a chronic pancreatitis with intermittent obstruction, or it is possible that she has some pancreatic calculi which did not show on the x-ray film or at least was not described in the protocol. This does not explain her pigmentation. Quite often these individuals will show sugar in the urine. Our patient showed a normal urine. At no place do I find a blood sugar report nor a glucose tolerance test having been run. On admission to the last hospital, our patient showed a low serum sodium, serum chloride, potassium, low total protein with a normal albumin-globulin ratio and a low calcium. This I believe can be explained by the persistent diarrhea and evidently poor food absorption. Pancreatic cysts have been reported as causing findings similar to those of our patient, but I do not know how we can diagnose this without some x-ray evidence of widening of the duodenal loop or a palpable mass. Sprue is another condition that we must consider. Tropical sprue is evidently a deficency disease mostly of the B12 and folic acid variety. These patients usually have glossitis, macrocytic anemia and large foamy fatty stools, in which the fat is usually in a split form while in pancreatic disease the fat is neutral. This is tropical sprue and usually responds very nicely to liver extract, B12 and folic acid. This patient was given this treatment in the first hospital and did not respond. Also, we find that she does not have a macrocytic anemia but a microcytic hyprochromic type of anemia. No mention any place is made of her tongue. In non-tropical sprue, or secondary sprue, however, glossitis is usually absent and the anemia is more of a microcytic hypochromic type as our patient had. The serum calcium is usually low and these patients may have tetany.

In the protocol we find no evidence of the patient complaining of tetany, but her blood calcium was certainly below normal – down to 7.8 mg. Also in this type of disease, the protein content of the stool is normal and the pancreatic enzymes, as obtained from duodenal drainage, are within normal limits. As much as I can decipher from the information we have, the duodenal drainage from our patient was within normal limits. These patients show abnormal segmentation of the upper intestinal tract and the typical deficiency pattern of pooling or puddling of barium. This our patient also showed. They usually show achlorhydria as our patient showed and they quite often show pigmentation about the nose, chin, hands and legs, which is very typical of pellagra. Secondary sprue is dependent upon some gastro-intestinal lesion wide spread enough to interfere with intestinal absorbtion. It is not a primary disease and usually responds poorly to the treatment that is used in tropical sprue, that is, vitamins and liver. A gastrocolic fistula or a duodenal colic fistula may cause steatorrhea, but I believe it is probably ruled out by the gastro-intestinal series. Carcinoma of the pancreas with partial duct obstruction can cause steatorrhea. Again, the laboratory results would not bear this out for these individuals usually lose a lot of nitrogen in their stools. Acanthosis nigricans is a skin pigmentation that usually appears in the folds about the groins and the axilla, but later may involve the back of the neck and other parts of the skin. The skin may be roughened and at times warty. This is associated usually with an abdominal malignancy and it has been suggested that the pigmentation is due to poor intestinal absorption.

Now, we come to another stumbling block. This patient improved very nicely on intravenous ACTH and later with the use of cortisone. Her stools decreased in number and she became mildly constipated. She gained weight and felt well. Whether this is a specific response or not I do not know or whether it is a response that one gets in ulcerative colitis which is probably non-specific. However, the patient developed a chill, sweating, fever, and her loose stools and vomiting recurred. She developed pain in her right lower quadrant. Two days later she was operated on. Of the conditions I have discussed, surgery would be of no value except as an exploratory procedure, unless the patient has a carcinoma of the pancreas or has a cystic disease of the pancreas or pancreatic calculi that we are unable to see on x-ray. A common duct stone seems unlikely as a causative factor of her pain and diarrhea although it can occur, but usually it is associated with complete obstruction with jaundice and we evidently have no jaundice in our patient. Persistence of blood in her stools certainly points toward some active process in the intestinal tract but evidently no carcinoma of the stomach was found and no ulcer. There is no intermittent jaundice to make us suspect either a stone in the ampulla or carcinoma of the biliary tract or ampulla of Vater. There may have been a diffuse ulcerative lesion through the intestinal tract, but this should have given gross blood in her stools. The only thing for which I can find a reason for surgery is a possible acute appendicitis. I do not believe that has any thing to do with her previous symptoms, therefore I will have to make a diagnosis of secondary or nontropical sprue and acute appendicitis, the symptoms being masked somewhat by ACTH and cortisone. There is another condition known as intestinal lipodystrophy or Whipple's disease. This is rather rare and occurs most often in men. It is due to a "marked deposition of extra-cellular and intra-cellular fat in the small intestine and its draining lymphatic channels with some cystic dilitation and fibrosis of the lacteals and mesenteric lymphatics with resultant impaired absorption" and diarrhea. These patients have the typical steatorrhea of sprue, but associated with this are migratory joint pains and arthritis which may dominate the picture for several years before the onset of the steatorrhea. Our patient did have rheumatoid arthritis two years before admission and was treated for five months with gold therapy. Also associated with this disease is skin pigmentation that simulates Addison's disease. The diagnosis is made by abdominal exploration and biopsy and that may be what our patient had—Whipple's disease.

DIAGNOSIS

1. Secondary or non-tropical sprue.
2. Lipodystrophy or Whipple's disease.

DIFFERENTIAL DIAGNOSTIC DISCUSSION

By Dr. Franz Ingelfinger

Before reading this history I wish to point out that this is a case presenting severe diarrhea with fat loss,—that is, steatorrhea,—as a result of which the patient went rapidly downhill. I

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AUTHORS	No. of Patients	Chronic, Resistant to Other Therapy	TYPES OF ULCERS				RELIEF OF SYMPTOMS (Chiefly Pain)				Surgery or Complications[1]	Side Effects Requiring Discontinuance of Drug[2]	EVIDENCE OF HEALING			
			Duodenal	Jejunal	Stomal	Gastric	Good	Fair	Poor	No Report			Complete	Moderate	None	No Report
Grimson, Lyons, Reeves	100	100	93	7			80	11	4		5		47		19	29
Friedman	15	15	14			1	5		4	6[3]			2			13
Bechgaard, Nielsen, Bang, Gruelund, Tobiassen	26	26	21			5	16	4	6				8	6	12	
McHardy, Browne, Edwards, Marek, Ward	162		162				136	12	11		3	1	14	9	7	129
Segal, Friedman, Watson	34	34	34[4]				14	13			7	2	5		8	14
Brown, Collins	117	99	117				97	7	8		5	8	55	9	8	40
Asher	77		65		7	5	52	9	16			16		9	21	47
Rodriguez de la Vega, Reyes Diaz	5	4	5				4		1					3	2	
Winkelstein	116	116	102	8		6	102		14				53		18	45
Hall, Hornisher, Weeks	18	18	18				11		1	6[3]			18			
Maier, Meili	38	38	24			14[4]	27	7	4[5]				10	2	5	21
Meyer, Jarman	25	18	25				21		4							25
Poth, Fromm	37	37	37				33	3	1				33	3	1	
Plummer, Burke, Williams	41	41	41				36		5				38		3	
McDonough, O'Neil	104	100	104				63	10	31			11	4		11	89
Broders	60	60	58		1	1	35	19	6				10	1	49[6]	
Legerton, Texter, Ruffin	11		11				11									11
Holoubek, Holoubek, Langford	76	69	76				35	27	10		4	10	26		10	36
Ogborn	42		39	2		1	42[7]									42
Shaiken	48	48	48				33	10	3		2		33	10	3	
Johnston	145	145	145				143		2			2	143		2	
Rossett, Knox, Stephenson	146		141			5	146					4[10]	53			93
TOTALS	1443	968	1380	17	8	38	1142	132	131	12	26	54	552	52	179	634
PERCENTAGES		67.8	95.6	1.2	0.6	2.6	81.3	9.4	9.3			3.7	70.5	6.6	22.9	

1. Not included in tabulations.
2. Included in "Relief of Symptoms" as "Poor" and in "Evidence of Healing" as "None."
3. Four had no symptoms when Banthine therapy was begun.
4. Of which seven were penetrative lesions and five partially obstructive.
5. No symptoms were present in four.
6. Two with symptoms only; no demonstrable ulcer.
7. Three were psychopathic patients and one had a ventricular ulcer of the lesser curvature.
8. Roentgen findings after treatment period of two weeks; forty-seven had duodenal deformity.
9. All returned to work within a week.
10. In these four, after relief of symptoms, Banthine was discontinued because of urinary retention.

During the past three years, more than 250 references to Banthine therapy in peptic ulcer and other parasympathotonic conditions have appeared in medical literature. Of these reports, 22 have presented specific facts and figures on the results of treatment in a total of 1,443 peptic ulcer patients, 67.8 per cent of whom were reported as chronic or resistant to other therapy. These results are tabulated above and show:

"Good" relief of symptoms was obtained in 81.3 per cent of the 1,405 patients on whom reports were available.

"Complete" evidence of healing was obtained in 70.5 per cent of the 783 patients on whom reports were available.

In all but 9.3 per cent, relief of pain was "good" or "fair." In all but 22.9 per cent, evidence of healing was "complete" or "moderate."

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think it helps, in hearing a history, to be oriented as to the major difficulty so that significant details may be appreciated. Dr. Chester Jones, Dr. Culver and their associates have been interested in a gastric factor as related to the steatorrhea that may follow gastrectomy, but this is usually not a cause of major steatorrhea. Severe steatorrhea is caused either by hepatobiliary insufficiency, by pancreatic disease or insufficiency, or by diffuse intestinal disease that impairs the absorbing surface. As I read through the history, let me see if I can select points that indicate one or the other of these three major causes of steatorrhea.

Dr. Chester M. Jones: May I make one comment. The pigmentation of the skin was so dark,—it was yellowish brown,—that she had been taken for a Negress by some persons who had not seen her previously.

Dr. Ingelfinger: I am happy to hear that, as yellowish pigmentation is relatively rare except as a result of jaundice or exposure to certain chemicals, but brown in various shades of intensity is quite common in a number of intestinal disorders. Now, with respect to the three possible causes of major steatorrhea, I shall dismiss disease of the hepatobiliary system, because the patient had no jaundice and the albumin-globulin ratio, prothrombin time and bromsulfalein test showed no evidence of liver disease.

Let me go on to pancreatic insufficiency. I do not believe this patient primarily had a pancreatic insufficiency for the following reasons: In the first place, she had a rather variable pain. Suppose she had a carcinoma of the pancreas; then the carcinoma would obviously have to be of the body or the tail, since she had no jaundice. When pain develops in this disease, it is a prominent feature and does not migrate over the abdomen and change its character, as it did in this case. As there appeared to be little back radiation of this patient's pain, it did not seem to be the pain that I usually associate with carcinoma of the body or tail of the pancreas. Such pain may vary from patient to patient, but in any one patient it will tend to be fairly constant. In chronic pancreatitis the pain might be like this, but this patient went downhill too rapidly for that disease. Deep pigmentation is a rare feature of pancreatic insufficiency, even when patients have considerable steatorrhea because of it.

An analysis of the stools showed that there were no undigested meat fibers and that the 24 hour fecal loss of nitrogen was less than 3 gm. Thaysen has given us 3 gm. as a magic figure, a daily loss of nitrogen below 3 gm. being said to indicate steatorrhea not caused by pancreatic disease, whereas a loss of more than 3 gm. is said to occur in pancreatogenous steatorrhea, for in this condition tryptic as well as lipolytic function is impaired. Although I think it risky to put too much trust in such sharply differentiated levels, nevertheless the facts that the patient had no meat fibers and put out less than 3 gm. of nitrogen in the stools are both good arguments against pancreatic disease.

As far as the analysis of the duodenal contents is concerned, I asked a spy to inquire discreetly what was considered normal here at the Massachusetts General Hospital. He started at a technician level and ended at the physician level, but no one could tell him. If you asked me what is normal at the Massachusetts Memorial Hospitals, I would say,—"I will call so-and-so and let you know in a day." So many different methods are used, so many different stimulants are used,—cream, in this case,—and so many variable periods of collection are used, that it is difficult to know what is normal. No matter what is normal, however, there appears to be some pancreatic activity, as evidenced by these tests, and the finding of some pancreatic activity, even if less than optimum, does not favor the possibility that this patient's steatorrhea was pancreatogenous. Furthermore, although I know that the Massachusetts General Hospital staff is interested in investigation, the fact that ACTH rather than pancreatic extract was used to treat this patient is an indication that they did not consider the duodenal enzyme studies indicative of pancreatic insufficiency.

Why do I discount the results of the enzyme determinations on the duodenal contents as a sign of pancreatic disease, even if the values reported should be considered low? Because by the time pancreatic disease has caused as much steatorrhea and weight loss as this patient had, any pancreatic function test would show practically no enzymatic activity whatever. Severe steatorrhea of pancreatic origin requires severe impairment of pancreatic function, and consequently a moderate or even low normal pancreatic enzyme output would not be consistent with severe pancreatogenous steatorrhea. These considerations induce me to eliminate the pan-

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creas as responsible for this patient's difficulties.

Let us go on to insufficiency of the intestine itself. An obvious cause of steatorrhea is a short circuit of the small intestine. But I have no reason to suspect that this patient had some entero-enterostomy that permitted food to bypass a large area of gut. I have to suppose that she had some disease of the intestine interfering with the absorption of food—particularly of fat. A great many findings suggest an Addisonian type of picture: pigmentation, weakness, loss of weight. We know that patients with Addison's disease may have bizarre gastrointestinal manifestations; nevertheless, there are certain arguments against either an adrenal or a pituitary disorder. The blood pressure was never very low. One year before admission the patient easily survived cholecystectomy. The serum sodium and potassium were not at levels found in Addison's disease. The 17- ketosteroid excretion was low, indeed, but it is low in many advanced debilitated conditions. The fecal loss of fat is also in excess of that usually found in Addison's disease. Although many physicians have tried to relate the adrenal cortex to fat absorption, the relation appears tenuous. In the untreated Addisonian patient a low eosinophile count is usually not found. Finally, the proof that the patient responded well to ACTH and cortisone is good evidence that she did not have either adrenocortical or pituitary insufficiency. Pigmentation is a common feature, moreover, of chronic small intestine insufficiency. Many patients with sprue, some with ulcerative colitis and some with ileitis have extensive pigmentation. The fact that the patient had pigmentation to such a degree that she was mistaken for a Negress,—which I must admit I have never seen—is not incompatible with an intestinal disorder.

What was the intestinal disorder? The most common small intestine disorder is regional enteritis or jejunoileitis, a more diffuse variant of the same disease. Did she have that? Usually this disease does not cause such extensive steatorrhea. Steatorrhea of intestinal origin usually indicates a very diffuse disorder, and even if half the intestine were peppered with granulomatous jejunoileitis, steatorrhea would not be so prominent. The most striking argument against regional enteritis is, however, the essentially negative x-ray report. Possibly this would be a good time to ask to see the films.

Dr. Stanley M. Wyman: The important films, those of the upper gastrointestinal tract, show a duodenal loop that is a little larger than usual, but I am not able to define compression of the loop in local areas. There is definite increase in the thickness of the individual folds throughout the duodenal loop as well as in the jejunum and well down into the ileum. The film taken at 30 minutes clearly shows so-called segmentation of the barium column in the lower jejunum and ileum. I can recognize no areas of localized narrowing or dilatation of small bowel.

Dr. Ingelfinger: There are no features characteristic of regional ileitis. If she did not have regional ileitis, did she have sprue? You would say this picture is consistent with sprue, I take it?

Dr. Wyman: Yes.

Dr. Ingelfinger: Sprue is a disease the nature of which is unknown. There are many characteristic features of sprue in this case—particularly the steatorrhea, the absence of marked fecal nitrogen loss, the downhill course and the suggestive traces of Addison's disease. The positive guaiac tests on the stools is an argument against sprue. In the absence of bleeding tendencies from prothrombin deficiency, I would not expect a positive guaiac test. However, the strongest point against sprue is this patient's failure to respond to all the vitamin B factors she received. If the patient had developed sprue *de novo* about a half a year before she entered this hospital and was then treated intensively with the various B factors that are listed, she should have shown some improvement. In sprue patients who have had the disease for years such treatment is relatively disappointing, but in a new case a more rapid improvement and some response to vitamin B-complex therapy would be expected.

A number of diffuse granulomatous conditions of the small intestine could give this picture: tuberculosis, sarcoid, Hodgkin's disease, nonspecific granulomas and a condition called Whipple's disease. To save time I shall confine my discussion to Whipple's disease. This case is a classic example of Whipple's disease,—if any condition of which there are only 15 or 20 cases reported in the literature can be said to present classic features,—with one exception that I shall discuss last. The patient's history is really too good. Whipple's disease is a granulomatous condition of the small intestine leading to stea-

torrhea and the accumulation of fat particles in the granulomatous reaction. Whipple's disease is characterized almost invariably by an antecedent arthritis; this patient had arthritis. Frequently there are pleural or pericardial reactions or chronic cough; this patient had pleurisy on two occasions. Many believe that Whipple's disease is a diffuse polyserositis or collagen type of disease in which the intestinal manifestations happen to be the major but not the only manifestations. The weight loss and pigmentation, the suggestions of Addison's disease without actual Addison's disease, the variable abdominal pains shifting around—all these you can find in Whipple's disease. The normal albumin-globulin ratio with low albumin and low globulin is characteristic. A number of these patients have had cholecystectomies—as in this case, without benefit. The stool examinations and positive guaiac tests are typical of Whipple's disease. So are the marked hypochromic anemia and the x-ray picture. To repeat, this patient is a classic case of Whipple's disease except for one thing —and here I raise the ugly head, although not in the usual sense, of sex. Alas and alack for me, this has been almost purely a male disease so far—and this patient was a female.

What about the patient's response to ACTH and cortisone? My guess is that the patient responded to the treatment but perforation in the lower small bowel took place and peritonitis ensued to account for the symptoms described. Why did she not have more reaction to the peritonitis? Patients given ACTH or cortisone apparently have an indolent type of intestinal perforation; her reaction is what you might expect if perforation occurred during ACTH or cortisone therapy.

I would be inclined to say, in spite of the reported incidence, that this woman had Whipple's disease or something fairly similar to it—a diffuse granulomatosis with the accumulation of fat and macrophages along the intestine, possibly pleural and pericardial adhesions and a peritonitis produced by intestinal perforation.

Dr. Walter Bauer: Would you want to include any type of connective-tissue disease in the diagnosis?

Dr. Ingelfinger: Scleroderma, lupus erythematosus and periarteritis nodosa may all present bizarre intestinal manifestations. As far as I know, steatorrhea is not so marked. In this patient the reason I did not consider scleroderma was that she apparently had neither skin changes nor esophageal symptoms. Although I am ready to make a diagnosis of intestinal scleroderma in the absence of skin changes, I think she ought to have had an esophageal component before scleroderma is considered seriously.

Dr. Wyman: I think that is a very important point.

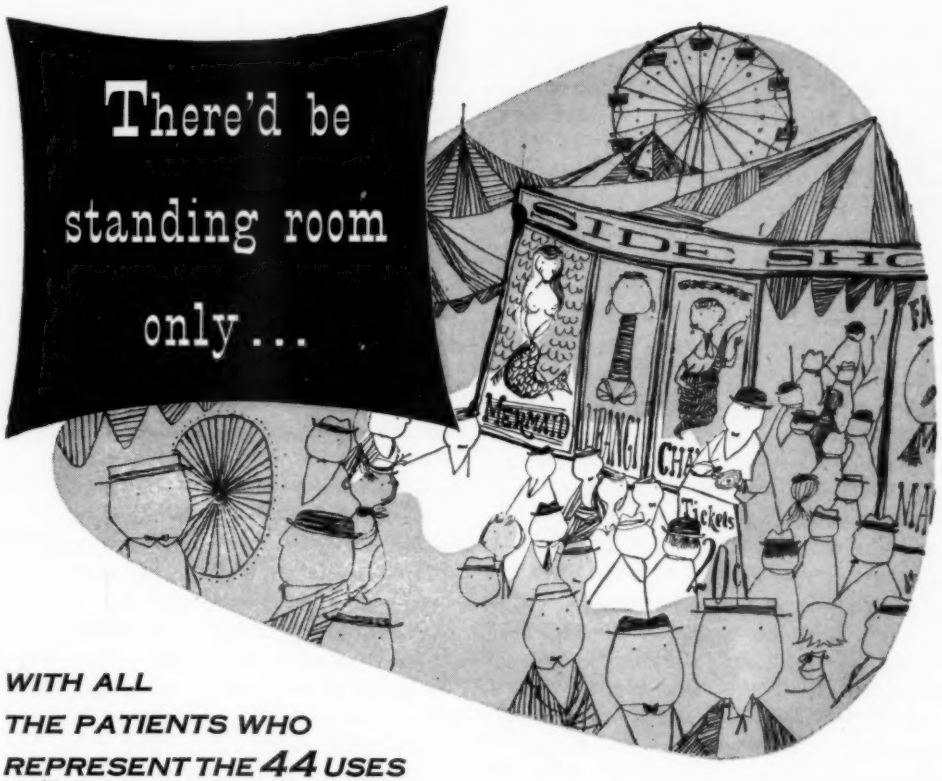
Dr. Bauer: I know Whipple's disease from the literature; I have never seen a case, but I think Dr. Ingelfinger will agree with my belief that it is a very hard diagnosis to prove at the clinical level.

Dr. Ingelfinger: Absolutely. At the clinical level one can only make a diagnosis of diffuse granulomatous disease of the intestine as opposed to pancreatic disease and sprue.

Dr. Bauer: You will further agree that many of the cases of so-called Whipple's disease could just as well fall into the connective-tissue-disease group. In those cases in the literature without pathological proof one is rather hesitant to accept the diagnosis. Would you agree to that?

Dr. Ingelfinger: Yes; of course, many physicians believe that Whipple's disease is a variant of connective-tissue disease. Furthermore, many have defined Whipple's disease according to their own criteria.

Dr. Jones: I think Dr. Ingelfinger's discussion has been orderly and superb. We tried to follow the same reasoning, but I am sure the engine knocked somewhat harder than Dr. Ingelfinger's did, as he discussed the case here. The patient was sent into the hospital after a careful work-up with a tentative diagnosis of sprue. The pigmentation was extraordinary, and outside the hospital the attempt had been made to rule out adrenal insufficiency. We were confident that it was not adrenal insufficiency, and the response to ACTH pretty thoroughly ruled that out. I believed she did not have sprue for about the same reasons that Dr. Ingelfinger gave. The acute attack of severe abdominal pain and fever and chills worried us because we thought that a perforation had occurred and was partly obscured by the use of corticosteroids. Dr. Richard Warren saw the patient with me and we decided against operation. About ten days to two weeks later, while the patient was still on corticosteroid therapy we decided to operate; she had had so much pain that we wished to be certain that no local disease was causing partial obstruction that could be treated. After watching the patient for



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48 hours we were sure that she did not have peritonitis. The preoperative diagnosis was Whipple's disease. I might add that the stool-fat figure does not give the entire story. Actually the original stool fat was about 40 to 50 percent of the ingested fat. After the use of corticosteroids, this had dropped to a fairly normal figure —about 5 per cent.

Clinical Diagnosis: Whipple's disease.

Dr. Ingelfinger's diagnosis: Whipple's disease. Perforation of intestine with peritonitis.

Anatomical diagnosis: Whipple's disease.

PATHOLOGICAL DISCUSSION

Dr. Benjamin Castleman: I am sorry that Dr. Richard Warren cannot be here, but he sent a colored slide of the operative findings. Dr. Jones, you were at the operation; perhaps you would describe the small bowel.

Dr. Jones: The picture was extraordinary. From the ligament of Treitz to about the midileum the bowel was greatly thickened, but the thickening diminished toward the cecum; it was almost the equivalent of a cellulitis. All the lacteals were full and they could be clearly seen as creamy white pathways. All the highlights here (on slide) represent fat in the lacteals, and in some places it almost looked as if the lacteals had burst; there was a diffuse spread of fatty material underneath the serosa. In the root of the mesentery covering the drainage from the ligament of Treitz down to the midileum, the lymph nodes were between two and three times normal size; they were white. One was excised; when it was squeezed creamy material actually came out of it. There was also what we had suspected but had not proved—a chylous ascites; there was about a liter to a liter and a half of chylous fluid in the cavity. At operation a segment of bowel, including its mesentery and lymph nodes, was removed en bloc.

In the lower power view of an ordinary hematoxylin-eosin stain of the mucosa of the ileum, the epithelium is intact; scattered through the entire tunica propria are large monocytes with small nuclei and a lot of pink staining foamy cytoplasm. The section of the lymph node shows, in addition to the markedly distended lymphatics, these same large clear cells. Since the lymphatics seem to be filled with fat, the fat stain was the first special stain used, expecting to find these large monocytes stuffed with fat droplets. The fat stain did show some fat droplets but not in these big cells; most of it is between the cells, and there are many areas in the mucosa where there is no fat. In other words, most of the fat was interstitial. The distended lymphatics in the lymph nodes were filled with fat, and some monocytes contained fat droplets; this lipid droplet stained pink with Nile blue sulfate, indicates the presence of glycerides. A periodic-acid Schiff stain for polysaccharides shows that these foamy cells in the bowel epithelium and most of those in the lymph nodes are Schiff positive and do not contain fat. This is not a new finding. It was described a year or so ago by Black-Schaffer, who emphasized the fact that this material was not sudanophilic. He believed the material was a glycoprotein. Dr. Agustin Roque, of our laboratory, repeated the Schiff reaction after saliva digestion, and it did not change; hence this material is not glycogen. Whether it is a glycoprotein, as Black-Schaffer maintains, or some other type of mucopoly-saccharide has yet to be determined.

This brings up the question of the real etiology of this disease. Most of the investigation has been based on the idea that the fatty material in the intestines and the lymph nodes is due to an obstructive phenomenon and is related to the cause of the disease. Perhaps that is only a secondary phenomenon and the primary condition is dependent on a defect in the intestinal epithelium itself, leading to an inability to absorb fats. If we could find out exactly what is in these cells we might get a clue to the cause of the disease. It has been suggested by Black-Schaffer that the disease should be called not lipodystrophia intestinalis,—a name offered by Whipple originally,—but merely Whipple's disease. It is interesting to note that in the original paper, Whipple described these "foamy" cells as being "in the neighborhood of fat deposits." Although he emphasized the large fat vacuoles in the mucosa, submucosa and lymph nodes, he carefully stated that these "foamy" cells were free from fat. This observation seems to have been ignored.

Dr. Ingelfinger: In going through the literature one gathers that chylous ascites has been found particularly in females. Females who are not accepted by some physicians as cases of Whipple's disease actually had what this patient had—dilated lacteals and some chylous ascites. It is interesting that this is another female patient with prominent lacteals and chylous ascites.

Dr. Jones: I should like to make one com-

ment. Since operation the patient has done extremely well. The steatorrhea has nearly disappeared; on an intake of about 110 gm. of fat by mouth she loses only 5 gm. in the stools, which is essentially a normal figure. Corticosteroids were stopped after the operation and were withheld for a month. She had no further diarrhea, pain or distention, and the fat content of the stools remained at a low level. Since that time she has again been given corticosteroids for purposes of study. My belief is exactly like yours—that the idea that Whipple's disease is due to a blockage of the lacteals, with consequent inability to absorb fat and excessive loss of fat in the intestinal contents, is probably an incorrect or incomplete concept. I think it is much more likely that in this disease there is a disturbance of mucosal-cell activity in the intestine,—or possibly at a submucosal level,—with a striking change in intestinal function. Probably what we have done in this case is similar to what we have done in intractable sprue—that is, we have changed the mucosal-cell activity to the extent of restoring toward or to normal the function of these cells, which among other things have to do with the absorbing of fat. I think it is much more important than the mere absorbing of fat as such. I think it means an alteration of cell dynamics and function. Because the cell dynamics were abnormal there was an abnormal handling of fat, and it was caught in the lacteals in excessive amounts. It is altogether too early to predict what will happen to this patient, but I think it is the first time that a dramatic change in symptoms, signs and laboratory findings has been produced by any form of therapy. The depth of pigmentation has diminished so that she is much less dark now than eight weeks ago.

Dr. Castleman: It is possible that these mononuclear cells contain a lipoprotein, which would be Schiff positive but would not take any of the fat stains—a condition analagous to that of the Gaucher cell. The latter contains kerasin, a galactolipoprotein, which is also Schiff positive.

PRE-EMPLOYMENT AND PERIODIC EXAMINATIONS IN INDUSTRY

The scope of the pre-employment examination is being gradually widened. For many years, several of the larger mines in Arizona have screened applicants for employment by chest roentgenograms, and repeated this periodically. At present, one of the railway systems in the state secures a pre-employment record of conditions in the lumbar spine by a roentgenographic record. McGee of Wilmington, Del., writes on the subject of "Periodic Health Examinations in Industry" in the Delaware State Medical Journal, January, 1953. He discusses the type of physical examination, the use of clinical laboratory and x-ray procedures, and the interview between employee and examining physician, after the examination. While he discusses chiefly the periodic health examination during the course of employment, his remarks are pertinent to the pre-employment examination as well. W.W.W.

THE FASCIA LATA REPAIR OF HERNIAS

Edmund G. Laird, of Wilmington, Del., writes in the Delaware State Medical Journal for January, 1953, on "The Evaluation of the Gallie Fascia Lata Repair of Difficult Hernias." He gives credit for the development of this procedure to Gallie and Le Mesurier, starting about 1922. Among the authors quoted by him, the name of W. O. Sweek does not appear. Dr. Sweek was a strenuous protagonist for this operation, avoiding one of the drawbacks of the procedure,—the time element,—by using local anesthesia. In the original fee schedule of the Arizona Industrial Commission this operation was listed with a higher fee allowance than the usual operation for hernia. Gallie and Le Mesurier's papers appeared in 1922-24, which was about the time Dr. Sweek began to advocate the use of hernia repair by the use of fascia lata strips as sutures. W.W.W.

Park Central Barber Shop

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The PRESIDENT'S *Page*

The increasing world fracases since World War I have forced the United States into an armed preparedness now and tension threatens again to explode into a third World War in the sixth decade of the twentieth century. The numbers of veterans of military service increase from year to year. While it is proper that all deserving veterans receive consideration for their services to their country, post-World War I patriotic enthusiasm started a trend for tax exemptions and free medical care that we may have cause to regret unless a sensible attitude is adopted before the major portion of three generations have become veterans.

It is encouraging to note that the American Medical Association is carrying on a fight in Washington toward such a sane attitude. Bills are constantly being introduced with the intent to increase veterans' benefits without apparent thought of the added tax burden, bills which some congressmen dislike rejecting because of the vote gathering or vote trading possibilities. These bills now are carefully reviewed by your A.M.A. representatives in Washington for the information of members of Congress. It is proper to care for those with service-connected disabilities or certain chronic prolonged illnesses that produce an extreme if not impossible drain on the finances of a veteran's immediate family but when a veteran becomes a civilian with an income comparable to or better than average it seems insensible, for the sake of the national economy, to provide him with extraordinary health benefits that he can buy through various insurance programs. A further encouraging note was added in an address by Mr. Louis K. Gough, Commander of the American Legion, before the House of Delegates of the American Medical Association in June, 1953 in which he said in part: "There are those who want a change in the law authorizing hospital care of the non-service connected who are legally entitled on the basis of inability to pay and availability of beds. We do not! We insist that only a selfish interest impels those who seek to abridge the basis for providing this medical care so positively established by the existing statute. The American Legion, like the American Medical Association, is made up of citizens who pay taxes and would like to see the federal budget balanced and the tax load lightened. We are for economy and efficiency in the government — most of all in the Veterans Administation....."

Those of you who are veterans should take an interest in local veterans' organizations and help guide them in the health activities programs.

Edward M. Hayden, M. D.
President

Editorial

ARIZONA MEDICINE

Journal of

ARIZONA MEDICAL ASSOCIATION, INC.

VOL. 10 AUGUST, 1953 NO. 8

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The Editor sincerely solicits contributions of scientific articles for publication in ARIZONA MEDICINE. All such contributions are greatly appreciated. All will be given equal consideration.

Certain general rules must be followed, however, and the Editor therefore respectfully submits the following suggestions to authors and contributors:

1. Follow the general rules of good English, especially with regard to construction, diction, spelling, and punctuation.

2. Be guided by the general rules of medical writing as followed by the JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION. (See MEDICAL WRITING by Morris Fishbein.)

3. Be brief, even while being thorough and complete. Avoid unnecessary words. Try to limit the article to 1500 words.

4. Read and re-read the manuscript several times to correct it, especially for spelling and punctuation.

5. Submit manuscript typewritten and double-spaced.

6. Articles for publication should have been read before a controversial body, e.g., a hospital staff meeting, or a county medical society meeting.

The Editor is always ready, willing, and happy to help in any way possible.

HOW MUCH ANATOMY DO YOU KNOW, DOCTOR?

The average doctor of medicine quits the didactic study of the Basic Sciences when he has established his practice. The pressure of practice with the essential clinical information which must be gleaned from reading at irregular and late hours are probably the chief factors in preventing most of us from keeping abreast of 'What's New' in the Basic Sciences. A certain amount of physiology, bacteriology, chemistry and pathology is learned from our current medical journals and by reading the pamphlets from reputable drug firms.

The most neglected of all of the Basic Sciences is anatomy. Although surgeons should constantly strive to broaden their knowledge of this subject, it is surprising how little general anatomy most surgeons know outside of the limited field in which they operate. Not only should surgeons be more adept in the knowledge of anatomy, but all of those in medical practice should have a good understanding of anatomical structures and their relations to each other to fathom diagnosis and treatment. Knowledge in most of the Basic Sciences can be grasped by seeing the printed word as the foundation of these sciences are based on proven or accepted theories that we have obtained from our earlier studies. Human anatomy, however, is a study that is based on structures and their relations which make the subject more difficult to retain. Many of the excellent articles on anatomy, usually published in surgical journals, are not read or not understood. To read and mentally visualize descriptions of an anatomical subject is often difficult although excellent illustrations accompany the description.

Until recently, the study of anatomy in the State of Arizona was limited to text books and postmortem examinations — neither giving the student the detailed information that cadaver dissection offers. Since the possession and dissection of cadavers has been recently made possible, we, as physicians, should take advantage of the opportunity afforded for the review and further study of anatomy. It is now possible for medical societies to obtain cadavers from the State Anatomy Board for study, providing all of the provisions of the Anatomical Laws are met.

At the beginning, it would seem wise that the Maricopa Medical Society, representing the northern part of the state, and Pima County Medical Society, for the southern portion of the

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state, set up a small dissecting room and through proper channels obtain a cadaver for teaching purposes. Regular courses in anatomy could be conducted for doctors in each section of the state. No doubt those hospitals having nurses' training programs would welcome the opportunity to have anatomical material on their hands and might offer space for the vat and the dissecting table.

A recent conservation with Dr. Harvill, president of the University of Arizona, gave this writer the impression that the University would be willing to cooperate with the medical societies in establishing some teaching facilities if the proper interest were shown. At the present time, the University is teaching anatomy with success and has a small laboratory which could be used as a model for those medical societies which would be interested.

It would seem that after all of the effort that the State Medical Association put forth to father the laws allowing legal possession and dissection of human cadavers, a certain amount of interest should be taken in making use of the laws to further promote our knowledge and skill in the learning and knowing more of the science of anatomy.

INTERESTING TOPICS

ARTICLES IN RECENT JOURNALS WORTH A LITTLE TROUBLE TO GET AND READ

BORNHOLM DISEASE. Three articles in June 20, 1953 issue of British Medical Journal on this condition. I had to look it up in the dictionary, and find it is also called epidemic pleurodynia, epidemic diaphragmatic pleurodynia, devil's grip, epidemic myalgia, epidemic myositis. Quite a batch of writers collaborate in these articles. They will be quite enlightening for any who, like me, never heard of the disease before.

See also PLEURODYNIA OUTBREAK IN NORTH TEXAS,—by Risser, Texas State Journal of Med., June, 1953.

W.W.W.

INJURIES OF THE MUSCULOTENDINOUS CUFF OF THE SHOULDER. Donald W. Blanche, M.D., Los Angeles. California Medicine, July 1953.

"Injuries of the musculotendinous cuff are frequent and often cause long periods of disability."

"A great majority of patients recover good shoulder function under conservative treatment. Operation is not urgent." General practitioners, as well as industrial surgeons, will find this good practical reading.

W.W.W.

DISEASES AND DEATHS. Emil Bogen, M.D. and Edward M. Butt, M.D., Los Angeles. For those interested in causes of death from statistical viewpoint, this report of 40,130 autopsies on patients treated at Los Angeles County General Hospital over the thirty year period from 1918 to 1948, will be good reading. In the June and July issues of California Medicine, 1953. W.W.W.

THE PROBLEM OF PANCREATITIS. Robt. M. Zollinger, M.D. and Thomas Boles, M.D., Columbus, O. Rocky Mountain Med. Journ., July, 1953.

Pancreatitis is a common and serious disorder which cannot be ignored in everyday practice. Studies designed to assist in the diagnosis are discussed in this very timely article. Report based on study of 67 cases.

Also PANCREATITIS, by Massie, in Va. Med. Journ., of June, 1953. W.W.W.

HEMATURIA and PITFALLS IN UROLOGICAL DIAGNOSIS. Two different articles by two different writers (H. V. Munger, Lincoln, Neb. and Edwin Davis, Omaha, Neb.) In The Nebraska State Med. Journ. for July, 1953,—go very well together. One tells what to look for and the other tells what will be missed if we omit to look. W.W.W.

COMPLICATIONS OF PNEUMOPERITONEUM THERAPY. I. D. Bobrowitz, M.D., F.A.C.P., New York. Diseases of the Chest, July, 1953. This article almost got abstracted; it is just that good. The reason it didn't is because of the limited number of physicians who use pneumoperitoneum which "has taken an exceedingly important place in the non-surgical treatment of tuberculosis." Most chest physicians get this journal anyhow. Those who do not, should. W.W.W.

EVALUATION OF NEWER ANTICHOLINERGICS (Darstine, Pamine and Reltine). McHardy, Bechtold and Browne, New Orleans. Louisiana State Med. Journ., May, 1953. W.W.W.

THE PROBLEM OF ADDICTIVE DRINKING. Roy E. Reed, M.D., Winston-Salem, N. C. North Carolina Medical Journal, June, 1953.

"Alcoholism is one of the most prevalent diseases in America." Out of the 65 million people who use alcoholic beverages, 4,000,000 are in the advanced stage of their affliction and are problem drinkers or alcoholics. How does one acquire the "disease" of alcoholism? The habitual use of alcoholic beverages by certain personality types. Alcohol is a depressant, the exact opposite to a stimulant. It depresses certain control functions of the brain and allows behavior and attitudes which are usually repressed. It is for this effect that alcoholic beverages are taken, —however specious the belief or argument otherwise may be. Two types of compulsive drinkers are described: (1) Neurotics or people who are definitely maladjusted before they start drinking; (2) the extrovert. (Note:—a very good short article dealing with alcoholism as a disease, which has come to be the medical viewpoint. If alcoholism is an addictive disease, and beverage alcohol is the primary cause, and alcohol is a narcotic depressant, it would seem logical that prevention of alcoholism would enter the picture of treatment by making it more difficult for such addicts to secure alcohol, rather than making it easier. Of course, that sounds crazy to all of the 65,000,000 who use alcoholic beverages. But maybe their thinking processes are slightly *depressed.*) W.W.W.

ANTIBIOTICS AND CHEMOTHERAPY IN INFECTIOUS DISEASES. Medical Annals of the District of Columbia, June 1953. Wm. J. Martin, M.D., of the Division of Medicine, Mayo Clinic, presents this subject in a rather unique way in the above mentioned journal. In about ninety terse paragraphs, each one numbered, he makes a simple statement about some antibiotic or about some infection and the antibiotics found useful in it. A few examples are given:

1. Four antibiotic agents in current use are capable of producing renal damage: (a) streptomycin, (b) polymyxin, (c) bacitracin, and (d) neomycin. Keep a close watch on the blood urea when using them; hesitate to give them in full dosage when the blood urea is elevated before their use.

9. Erythromycin is one of the last defenses against micrococci resistant to more commonly used antibiotics. It currently has life saving value. However, micrococci can become resistant to it. It is given in doses of 300 to 500 mg. by mouth every six hours.

29. Five clinical antities not uncommonly encountered require combined antibiotic therapy: (a) brucellosis, (b) enterococcal endocarditis, (c) bacteremia, (d) peritonitis, and (e) meningitis of undetermined cause. For the last three, aureomycin or terramycin is combined with streptomycin, except that for meningitis aureomycin is preferred to terramycin. And so on, for 102 statements. Very interesting reading. W.W.W.

POTASSIUM METABOLISM. The Journal Lancet, June, 1953. This whole issue is taken up with Part II of a Symposium on Potassium Metabolism. Part I is in the May issue, which this reviewer does not recall having seen. Part II has fifteen articles. These and those in the May issue of The Journal Lancet, making up Part I,—cover a recent Symposium on Potassium Metabolism, held at the University of Minnesota. In "The Pathology of Potassium Deficiency" by Follis, the importance of this study is suggested by the statement, "potassium is one of the 17 or 18 elements which have been shown to be essential for the integrity of the mammalian organism, and is quantitatively the most prominent intracellular cation."

Maybe too heavy for summer reading, but good for a profitable evening along about October or November. W.W.W.

FARMER'S LUNG. Studdert,—British Medical Journal, June 13, 1953.

This author describes a clinical condition which he says is "conveniently named 'farmer's lung'." This he claims is a non-specific lung irritation following exposure to mouldy vegetable dusts. He also says, "the currently quoted view that farmer's lung is an actual fungous infection of the lungs does not bear close examination. There is a close similarity to coniosporiosis, byssinosis and diffuse granulomatos pneumonitis. (NOTE: To this reviewer he has not made out a good case for his contention that this condition is not an acute fungous infection.—W.W.W.).

TOPICS OF *Current Medical* INTEREST

RX., DX., AND DRS.

By GUILLERMO OSLER, M.D.

The Californians are shore exposed to SCIENCE! One section of a recent Los Angeles daily paper which we saw contained the following medical items,—

1. Announcement of a new 'arm prosthesis' clinic, to be opened by a medical school. . . . 2. A possible 'Dope Clinic' for addicts, with the minimum dose to cost 15 to 20c. . . . A story of the total synthesis of cortisone, with use of the undiluted chemical terms.

If you have a friend who has a friend in YELLOW FEVER territory, it might pay to tell him/her how one may now obtain vaccine. . . . The U.S.P.H.S. reports that the Rocky Mountain Labr., until now the sole American source, has stopped production. All orders now are to go to the National .Drug .Company, .Philadelphia. . . . The W.H.O. designates and publishes a list of vaccination centers, and various U.S.P.H.S. facilities, Defense installations, and state health departments are included.

Some of the non-medical prints have carried stories about a dental convention at which a DENTIST-PSYCHIATRIST (and it doesn't say which he was first) moaned about the unnatural relationship between patients and dentists. "They hate us", he said. "We suffer psychically because people are against us, and tension results". . . . The psychiatrists (simple, not dental) are also wallowing in self-pity. A mid-western medical journal tells of the trusting N-P who is not hated to start with, is often hated as the patient improves, and sometimes has to make the patient hate him. . . . We should be nicer to dentists and psychiatrists.

The N. Y. City Dep't. of Health urges that, in the absence of a biochemical test for cancer, MASS X-RAY SURVEYS are the BEST means of detecting INTRATHORACIC NEOPLASMS. . . . Dr. Churchill of San Diego, after surveying the results of a single mass survey several years ago, says people over 40 years of age need films at least every 6 months to be safe from new growths. And the films require expert reading, too.

How big and how pure does a physician have to be before he is beyond reproach? The size is limitless, apparently, if one is to judge by what happened to Dr. Loyal Davis of Chicago. . . . Almost all of us have heard his name, or even been in contact with his teachings, research or writings. He is professor of surgery at Northwestern, editor of S.G., and O., chief of surgery at Passavant Hospital, and a member of the board of regents of the American College of Surgeons. . . . Not a likely target for charges of unethical conduct and disloyalty of his profession, yet he was so accused and nearly convicted by the Chicago Medical Society. . . . Dr. Davis took a public stand against fee-splitting. One hundred and fifty physicians petitioned that he be tried by the Society for unethical conduct in obtaining publicity, giving misleading information, etc. A committee voted him guilty. The council approved the action, then tabled it, then rescinded approval. . . . The A.C.S. backed him up, as did a large number of newspapers, but it goes to show how difficult it may be for an honest man to walk an honest path in public without coming a cropper on a roadblock. . . . One also never knows how much of a part personality or social relationships have to do with such a ruckus.

BOOK TITLE OF THE MONTH,—by J. L. and C. B. de Courcy of Cincinnati, "Pheochromocytoma and the General Practitioner." . . . Sounds like the ancient story of the attitudes which newspapers in three different European countries took towards an elephant. . . . Our own tabloid would say, "Pheo and the G.P."

The 'WOOD LIGHT', invented by Robert Wood at Johns Hopkins 50 years ago, has become an important diagnostic tool. It consists of an ultraviolet light with a nickel oxide filter to remove visible light rays, but there is a residual blue light. . . . When used in a dark room, many substances are found to have a characteristic fluorescence. Objects are blue, due to the reflected blue light, and sometimes show fluorescence from the U-V rays. . . . The normal skin is purplish-violet. Freckles, scars, and blood vessels are a purplish-brown. Medications, deodorants, cosmetics may produce a wide range of colors. Natural teeth are pearl white, while false teeth are violet or lemon green. . . . Vitiliga areas are white. Microsporons (on hair or clothes) fluoresce a vivid light green. Tinea lesions fluoresce as a powdery golden yellow, etc. . . . The most useful findings are in the diagnosis of squamous cell carcinoma. The ulcerated areas fluoresce a live-coal red in the midst of the deep violet area. Other ulcerations, carbuncles, and (most importantly) basal-cell epithelioma DO NOT FLUORESCE. . . . There are some fine illustrations in an article by Ronchese of Boston in 'Medical Radiography and Photography' by the Eastman Kodak Co. (Vol. 29, No. 1, 1953).

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NOT FOR PROFIT

THE HOSPITAL BENEFIT Bulletin

Special Published Bi-Monthly by the Hospital Benefit Association, First Street at Willetta, Phoenix August, 1953

Question QUIZ
Do you know the answers?

Q. What plans are now offered by the Hospital Benefit Association?

A. At the present time, the Association offers a choice of three plans: $5-a-day plan and $10-a-day plan (with or without surgery); and the Surgical Plan, based on Arizona Industrial Commission Schedule of Fees.

Q. Under the Surgical Plan may a doctor give emergency treatment for an accident or injury without hospitalizing the patient?

A. Yes. In case of an accident a doctor may be paid for services given at the scene of the accident, in the home or at the doctor's office, within 24 hours after the accident.

Q. How much red tape is involved in submitting a claim by the doctor?

A. None. The Association sends the doctor a short bill form, giving the diagnosis, etc.

Q. Can doctors speed up processing claims?

A. Yes. By promptly returning the short bill form to the Association.

Q. What per cent of the claims submitted to the Hospital Benefit Association require long-claim forms and hospital reports?

A. Approximately 3% require further information to establish date of onset of the illness (only illnesses that actually begin or are diagnosed 30 days after effective date of membership are eligible). Accidents are covered from the first day of membership.

Q. Why does the Hospital Benefit Association have such a low rate of questionable claims?

A. The low rate is due to the fact that enrollment is handled properly by well-trained personnel. Members know just what benefits to which they are entitled.

Hundreds Of Arizonans Join Hospital Benefit Association On Doctors' Recommendations

The Hospital Benefit Association is especially pleased to find out that many new members join the organization on the recommendation of their doctors. Furthermore, it is found doctors often recommend the Association to individuals who are not eligible for group enrollment, because they can become HBA members easily and quickly — at any time. Then, when the doctor finds a member-patient must be hospitalized, he need not hesitate because of working a financial hardship on his patient.

Surgical Plan Benefits

Many features in the HBA Surgical Plan are very important to the doctor. For example, members are allowed to select any physician (M.D.) — licensed to practice medicine and surgery. The Association makes no attempt to set the surgical fee, but leaves this important decision to doctor and patient. The actual cost is paid by the Association up to the amount shown in the schedule of fees which is the same used by the Arizona Industrial Commission. And naturally, doctors appreciate the Association paying the bills directly to them, without delay. Paper work, too, is kept to a minimum. HBA forms are simple, quick and easy to fill out.

Office and Home Emergency Care

Provision in the HBA Surgical Plan is made to pay the doctor for emergency treatment of accidents at the scene of the accident, in the doctor's office or in the home. Surgical fees are paid for dislocations, wound repairs, fractures — including X-rays, if treatment is made within 24 hours of the accident.

Doctors also report the fact that patients make a speedier recovery when they are not worried about bills. Membership in the Hospital Benefit Association gives the patient security and peace of mind.

Socialized Medicine Foe

The Hospital Benefit Association has long been active in the fight against socialized medicine—or compulsory health insurance.

The Association fought this type of socialistic government intervention with educational advertising in newspapers and on radio. The campaign was so effective it received a special commendation from the American Medical Association.

"We were in the same hospital together —too bad you turned out to be a girl."

If most physicians were asked to name a few states which would probably license chiropractors, they would likely include New York. . . . They'd be wrong, since New York is one of the few NOT licensing that group, and they have recently defeated another such measure.

'TRUTH SERUM' is a newspaper term which is supposed to be mysterious, and usually is misunderstood by the public. . . . It is sodium amytal interview, with the drug being given intravenously. Alcohol and carbon dioxide have been used to get people to talk in past years (and centuries). . . . The Medical Annals (D.C.) has analyzed the usefulness of the method. Medically it is a useful adjunct to psychiatric study, but it cannot replace such an investigation. Legally, it is highly unreliable, since 'truth' is the objective, and since the subject may tell truths, untruths, or fantasy. . . . Only the confessingly inclined will talk, and the same information can usually be obtained by suitable questioning.

The one-sentence REVIEWS OF CURRENT MEDICAL LITERATURE by Dr. Chauncey Leake of Galveston are amazingly diverse in topic and origin. In the Clinical section, for instance, one sees "S. Rowlands reviews isotopes as aid to diagnosis (ED IN MED J). . . . DA Sadowsky & Co. concludes smoking is not etiologically associated with lung cancer (J NAT CANC INST). . . . JT Scales & Co. discuss design of cuirass respirators (LANCET). . . . CC Sturgis offers HYPERSPLENISM: A CLINICAL EVALUATION (CC Thomas, Springfield, Ill.). . . . S Wieden confirms (MED J AUSTRAL) HG Kunkel's zinc sulfate turbidity test for liver disease (GASTRO-ENTEROL)". . . . Makes one wish one could read. They won't like that comment on smoking and cancer in St. Louis, however.

Alameda County in California has been a recent leader in MEDICAL IDEAS, especially as they apply to a widened coverage of care, better collections. . . . Less is known about a Public Health program which worked, but in reverse. They had a mass-immunization of school children until five years ago; abandoned it in favor of an educational program; and now find that the parents really have an interest and know what the kids need and get. 80% of kindergarten and 70% of other children below 16 years are immunized, and both the health clinics AND the private physicians do a thriving job. . . . They believe that the results are now better.

An association between Charles Pfizer & Co. and Dr. Payne of Howard University is quite understandable — drug supply-and-demand for research. . . . The connection of those two with the Wall Street Journal might seem more obscure, but it really isn't. The Pfizer Company is listed on the stock market. It has announced the production of Viomycin. Dr. Payne did the preliminary work. Any new money-making product is of interest to the W.S.J. Selah!

One, of Twenty-One Resolutions Adopted by the Arizona Pharmaceutical Association at their recent Convention

WHEREAS through the courtesies of R. Lee Foster, M.D., Editor-in-Chief of ARIZONA MEDICINE JOURNAL, the official publication of the Arizona Medical Association and Mr. J. N. McMeekin, publisher of the said journal, the Publishing Committee of the Arizona Medical Association made available to the Arizona Pharmaceutical Association a page each month in their publication and

WHEREAS the opportunity of disseminating the views of Arizona pharmacists through this medium, to the physicians of our state has been of great value to our profession

NOW THEREFORE BE IT RESOLVED that the Arizona Pharmaceutical Association express its thanks to Dr. Foster, Mr. McMeekin, and the members of the publishing committee of ARIZONA MEDICINE for the opportunity and favor and extend to them and to the members of the Arizona Medical Association the use of the pages of our own publication, the ARIZONA PHARMACIST whenever they may desire its use.

THE AMERICAN CONGRESS OF PHYSICAL MEDICINE AND REHABILITATION

The 31st annual scientific and clinical session of the American Congress of Physical Medicine and Rehabilitation will be held on August 31, September 1, 2, 3 and 4, 1953, inclusive, at the Palmer House, Chicago, Ill.

Scientific and Clinical sessions will be given on the days of August 31 and September 1, 2 and 3. All sessions will be open to members of the medical profession in good standing with the American Medical Association.

In addition to the scientific sessions, annual instruction seminars will be held. These lectures will be open to physicians as well as therapists, who are registered with the American Registry of Physical Therapists or the American Occupational Therapy Association.

Full information may be obtained by writing to the executive offices, American Congress of Physical Medicine and Rehabilitation, 30 North Michigan Avenue, Chicago 2, Illinois.

BOOK REVIEW

Morbus Alzheimer and Morbus Pick: A Genetic, Clinical, and Patho-Anatomical Study, by Torsten Sjogren, Hakon Sjogren, and Ake G. H. Lindgren. Acta psychiatrica et neurologica. Supplement 83. 152 pages, with 11 illustrations and 14 tables. Einar Munksgaards Forlag, Norregade 6, Copenhagen K, Denmark, 1952.

This monograph represents a most lucid exposition of the genetic, clinical and pathologic features of Alzheimer's Disease and of Pick's Disease, conditions which are commonly the cause of presenile dementia. 80 cases were studied and extensive field investigations revealed 30 secondary cases. 36 were verified by histopathologic examination, 26 by pneumo-encephalography, and 15 by clinical examination only.

I. *Genetic features.* There was apparently no intermarriage among the families. An estimate of the empirical prognosis in the risk period of 40-70 years was 16% if one of the parents was affected, and 2.5% if neither parent was affected. Alzheimer's Disease (presenile sclerosis) showed a greater chance of a multifactorial type of inheritance than Pick's Disease. The differences between the two diseases were apparent only on pathologic examination. The average life expectancy was approximately 50% of that of the same age group in the general population. There were a few more cases among women, but not enough to be statistically significant. In general the incidence of such disorders in later years of life is greater than is usually realized.

II. *Clinical features.* The two diseases are more similar on clinical examination of patients than they are dissimilar. Lack of spontaneity was predominant (15 of the 18 cases of verified Alzheimer's Disease, and 8 of 13 verified cases of Pick's Disease) Aphasia, agnosia, apraxia, hypertonus and facial paresis were common in Alzheimer's Disease. Dementia was severe in both types. Convulsions were more common in Alzheimer's Disease. Hypertonus and gait disturbances were uncommon in Pick's Disease.

III. *Pathologic features.* The cerebral atrophy was diffuse in Alzheimer's Disease and circumscribed in Pick's Disease. Changes in the basal ganglia could usually be found in Alzheimer's and rarely (one case) in Pick's Disease. Argentophile plaques and fibrillar condensation were found extensively in Alzheimer's, but not in Pick's Disease. Ballooned cells were present regularly in Pick's, but no in Alzheimer's disease. 3 of the cases of senile patients with Pick's disease also showed the histologic changes of senile dementia.

The illustrations are well chosen and clearly presented.

John R. Green, M.D.
Phoenix

ANOTHER PITFALL IN ANTIBIOTIC THERAPY

The development of antibiotic therapy has been the major advance in medicine in the present generation. As the number of antibiotics has multiplied and their specific effects become better known, many drawbacks have developed. One of the unexpected complications has been the reported severe and sometimes fatal enterotoxemia following the administration of terramycin or aureomycin. This effect is not due to hypersensitivity, but to the very efficacy of the drugs in destroying the bacterial flora of the intestines. Following the administration of terramycin or aureomycin, a decrease in the total number of bacteria in the intestinal tract occurs. The Escherichia coli decrease more rapidly than do the organisms of the Proteus group, so that by the end of the fourth day Proteus is predominant in the stool. At the same time the strains of Micrococcus pyogenes (Staphylococcus) which are resistant to these drugs (30% of all strains) will begin to increase. Not all patients have resistant strains of Micrococcus pyogenes present, but those who have are in danger from the potent enterotoxin which this organism produces.

Should a choleriform syndrome develop following the administration of these antibiotics, this represents a bacteriologic emergency. Immediately on the appearance of a diarrhea in a patient receiving terramycin or aureomycin, the stool should be immediately examined for Gram-positive cocci. If they are present in any numbers, these antibiotics should be immediately stopped. This may be sufficient to bring about a suppression of the Micrococcus pyogenes. If not, erythromycin should be administered. This drug is suppressive to practically all strains of Micrococcus pyogenes and has little effect on Escherichia coli.

(Taken from report of material presented before the Minnesota Society of Clinical Pathologists by Dr. P. T. Sloss a fellow in Pathology of the Mayo Foundation. More details in the Section on "Laboratory Aids to Medical Practice," Minnesota Medicine, January, 1953). W.W.W.

Arizona Pharmaceutical Page

THE MEANING OF PHARMACY

Over the past century American Pharmacy has come to mean different things to different people in our changing economic order. Pharmacists know that the retail drug store is both a professional and a commercial institution. They are constantly seeking ways to better and strengthen it from a professional point of view, while making secure its economic foundation.

It is interesting to note that prescription practice has been constantly growing as the people become more and more health conscious. Medicine today has become very complicated by its nature and must be handled by those thoroughly trained in its knowledge.

Every day of the year nearly 23,850,000 persons visit one of the 53,000 pharmacies in the United States alone. Some, of course, make leisurely visits just to chat and for minor purchases entirely unrelated to medical care. Millions of others, however, come with prescriptions to be filled. Just as they have confidence in the physicians who have prescribed the medications, they must have confidence in the pharmacist who compounds it and in the quality of the ingredients he uses.

The public subsidizes the retail pharmacy by using it as a source of a variety of commodities and services related and unrelated to medical care, so that it can be assured of pharmaceutical services at reasonable costs, if, as, and when needed. In this subsidization we find it possible to offer pharmaceutical services by thoroughly trained licentiates in all areas of population, thereby making available those services when required by the physician and the patient.

Pharmacy today has little to do with the outmoded drugs such as pipsissewa, elecampagne, blood root or balm of gilead buds. It gives little space to Blauds pills, opdeldoc and vinegar of squill. There is little need for Bateman's drops and pills of aloes and myrrh. Pharmacy today deals with the everchanging medications developed by our immense laboratories, for the use of the profession in treating its patients. It is being based upon the pharmaceutical measurement of drugs and not upon the polygot mixtures of folk lore medicaments.

And the price. That is a question that is bobbing up to torment all those who have to deal with medical care. In the Unani Hospital in Hyderabad City, India, under ancient time-tested healing methods, the doctors of that area prescribe such rare potions as a combination of rubies, gold, emeralds, silver, musk, ambergris and pearls. It is known as "jawahir muhra" and it sells for $65.00 a treatment. It is reputed to be excellent for heart disease.

The hospital itself is no mumbo-jumbo affair. Instead it is a modern, well equipped and immaculately clean building. The doctors practicing there argue that the treatments they use have been used successfully for centuries and, although they cannot understand why they work, they firmly believe in the results obtained. The antibiotics, the hormones, the anti-histamines and all the other new drugs we have in common use in Arizona today may be expensive but certainly it is cheaper by far than the top treatment in India.

Prescription pricing has been based upon the merchandise cost, the cost of containers and equipment and the cost of the time of the pharmacists dispensing the medication. Many times the doctor is called upon to quote a price to a patient. In doing so he might inadvertantly fail to take into consideration the time element of dispensing. Most of the pharmacies in this state have been following one or another of recognized prescription pricing schedules so that the patient may receive his medication for a price based upon a reasonable schedule of operational costs.

Republican "Freshmen" On Senate Health Subcommittee

The three Republicans on the new Health Subcommittee of the Senate Labor and Public Welfare Committee all are first-termers. Chairman is William A. Purtell, Hartford, Conn., industrialist, who long has been active in community and business groups. Other Republicans are Barry Goldwater of Phoenix, Ariz., and Dwight Griswold of Scottsbluff, Neb. The Democratic minority is represented by two men experienced in health legislation, Lister Hill of Montgomery, Ala., and Herbert Lehman of New York. Under the new procedure, the subcommittee no longer will have its own staff.

A.M.A. Washington Letter

Keep Plugging "Your Doctor" Film

Local medical societies can improve their "public relations rating" in the community by booking the "Your Doctor" film for non-theatrical showings at society meetings or to PTA's, schools, churches and other groups interested in health. Sixteen milimeter prints of this 15-minute sound film now are available on loan from Modern Talking Picture Service, Inc., 45 Rockefeller Plaza, New York 20, N. Y. Produced as a documentary, this film points up ways in which the medical profession has helped to bring better medical care to everyone. During 1952 more than 12 million Americans viewed the movie in over 5,000 commercial theaters throughout the country. It is hoped that medical societies will continue to promote the film locally.

A.M.A. News Notes

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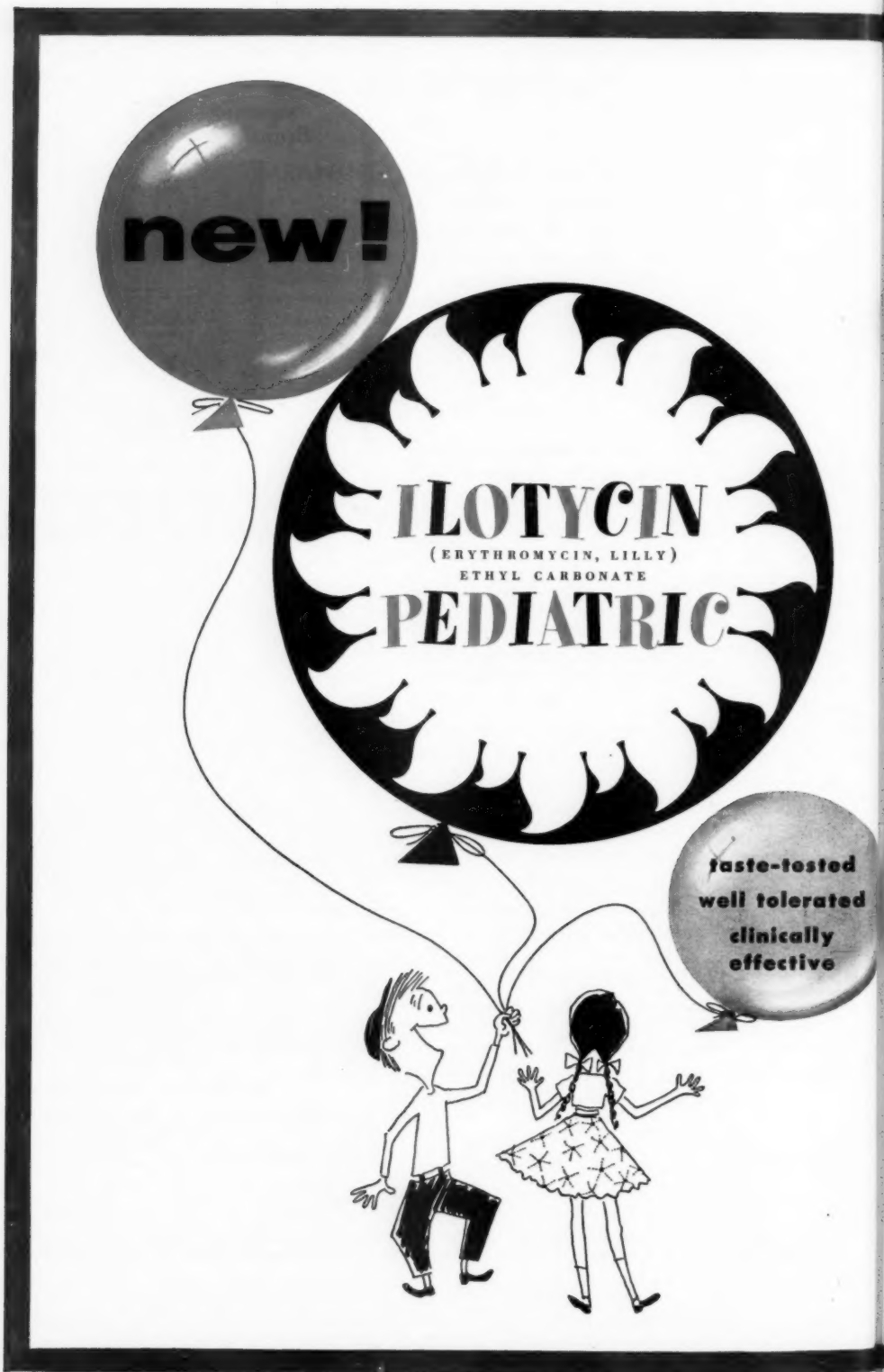
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Woman's AUXILIARY

PUBLIC RELATIONS

The Public Relations Round Table Discussion held June 5, 1953 in New York, as part of the Annual Convention of the Woman's Auxiliary to the American Medical Association, was one of the most important of the convention's sessions. It was well attended, chiefly because it is at such thought provoking meetings that the real value of the convention, namely an interchange of ideas, is paramount.

The panel was moderated by Mrs. Neil W. Woodward, chairman of the National Public Relations Committee. Under her direction, members of certain constituent auxiliaries from throughout the country, told of the ways and means they handled their own, local, public relations problems. Arizona was amongst those represened on the panel.

The methods used to create better goodwill and understanding between the medical profession and the community, were as varied and numerous as were the speakers. The common denominator present in all methods, however, was the same. Health education and service to the community, were the back bone of every plan. As all who have done auxiliary work in Arizona know, this is nothing new. We have pushed forward on these two fronts remarkably well in the past few years.

However, as individuals, a review of our obligations as suggested by the National Auxiliary in regard to community service, might well be in order. There are certain things that we cannot ignore any more than we can the jangle of the telephone, much as we'd so like at times. When we married doctors, we assumed the responsibility of sharing the problems confronting them.

In the horse and buggy days, no one made much fuss about community service. The good doctor and his wife *lived* a life of community service. As times have changed and as the doctor's wife is no longer obliged to take eggs or a chicken in lieu of payment for her husband's services, other duties are expected of her.

A good Public Relations program is one of the main endeavors of the medical profession. Being wedded to the profession, it becomes her goal, too. There is no better way for a wife to maintain the prestige of her husband than by promoting the advancement of health and health education in her community. In other words, she will serve her fellow men and in so doing serve a great humanitarian profession.

Working through her auxiliary, she will need first of all to be an informed member. To enable her to act as an interpreter of medicine's aims and problems, her own self education is a must. With such an education every daily contact can prove to be extremely valuable in the Public Relations field. Whether the contact is as a member of a civic or religious group, or simply a few words with the grocer or milk man, the opportunity is there. Too many of us bypass such opportunities by the simple expedient of ignoring them.

The final and positive step in the development of good Public Relations is service. Giving of her time for the betterment of her community usually brings its own reward. In addition it brings about the much sought after, mutual understanding between the community and the profession.

There are so very many ways in each locality that the doctor's wife can serve. The choice is wide and the obligation in ours. Your willingness and leadership are needed. Only by assuming our obligations can we expect the respect and confidence we desire. Let us all stop procrastinating and meet our responsibility.

Mrs. John K. Bennett

Delegate to the Annual Convention of the Woman's Auxiliary to the American Medical Association.

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UNIVERSITY OF COLORADO SCHOOL OF MEDICINE NEWS RELEASE

A three-day postgraduate course in "Recent Advances in Infectious Diseases" will be given at the University of Colorado School of Medicine on August 17, 18 and 19, 1953. This conference will be sponsored by the Department of Medicine and the Office of Graduate and Postgraduate Medical Education and will be of particular interest to general practitioners and internists.

Among the topics of special interest will be the rickettsial diseases prevalent in the Rocky Mountain States and the diseases of virus etiology involving the respiratory, digestive and nervous system. Emphasis will be placed upon recent advances in diagnosis and treatment.

Two of the outstanding guest lecturers will be Dr. William M. M. Kirby and Dr. Herald R. Cox. Doctor Kirby is presently Associate Professor of Medicine at the University of Washington School of Medicine, Seattle, Washington. He received his M.D. degree from Cornell University Medical School and interned in medicine at New York Hospital. His residency training in medicine was received in the Stanford University Hospitals and later he was visiting investigator for Rockefeller Institute for Medical Research. Doctor Kirby is a member of many medical and investigational societies. He is the author of many papers concerning the antibiotics in infectious diseases.

Doctor Cox is Director of Viral and Rickettsial Research, Lederle Laboratories Division. He was formerly with the USPHS, Rocky Mountain Laboratories in Hamilton, Montana. He is known for his work in developing vaccines against typhus and, more recently, for his work in rabies and poliomyelitis.

NOTICE

ALL CONTRIBUTORS OF ARIZONA MEDICINE SHOULD HAVE THEIR MATERIAL IN THE JOURNAL OFFICE NOT LATER THAN THE 10th OF THE MONTH PRIOR TO PUBLICATION IN ORDER TO HAVE ARIZONA MEDICINE REACH ITS READERS ON OR BEFORE THE 10th OF THE MONTH.

Material arriving after that date will be published the following month.

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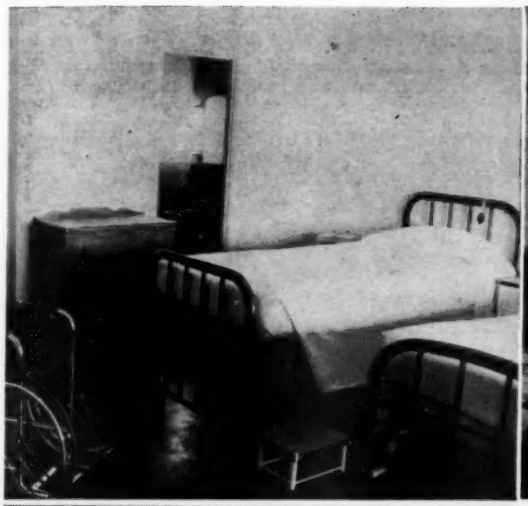

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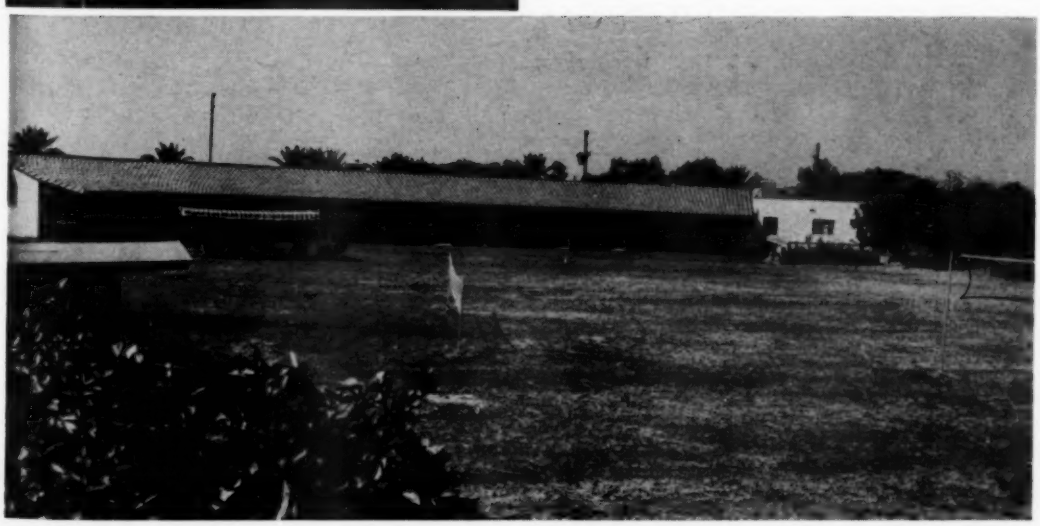

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